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To investigate teaching techniques with trainable mentally retarded children, 29 day classes were visited twice; 100-minute observation periods were recorded on tape at each visit. Eight major areas of teaching methods were found: feeling tone, guidance and reinforcement, individual and group control, involvement of children in lesson, motivation, nonverbal teaching, structure of the teaching situation, and teacher centered behavior. Conclusions were that teachers spent a large proportion of time in attempting to get responses from children, acknowledging and encouraging responses, and explaining concepts and activities; nonverbal techniques were greatly used. Indications were that better teaching occurred in smaller groups which had fewer brain injured children and children who were more similar in IQ and closer in age. Of 15 major lesson categories, language development received the most emphasis while practical arts received the least. Teachers did individualize instruction but tended to work with one child only or the whole class. A teacher competency checklist and categories of lessons covering arithmetic, arts and crafts, dramatization, health and safety, language development, music, occupational education, practical arts, motor development, socialization, science, self help, social studies, sensory training, and mental development are included. (DF)

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AN EXPLORATION OF CLASSROOM PROCEDURES FOR TEACHING TRAINABLE MENTALLY RETARDED CHILDREN

The research reported herein was performed pursuant to Contract SAE 6462, between the U. S. Office of Education, Department of Health, Education, and Welfare, and George Peabody College for Teachers, Nashville, Tennessee.

ACKNOWLEDGMENTS

The research reported herein was performed pursuant to Contract SAE 6462, between the United States Office of Education, Department of Health, Education, and Welfare, and George Peabody College for Teachers, Nashville, Tennessee.

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INTRODUCTION

A new frontier for public education has opened with the rapid growth of public day-school classes for trainable mentally retarded children (IQ 30-50). Educators are working with special classes which have undergone little previous study concerning goals, curriculum, or methods. In the past teaching techniques and lesson areas have developed on a trial-and-error basis. The few researches which have been reported are evaluative studies of the effectiveness of these programs. They are too general to provide much help in determining how or what to teach. Before this study was undertaken there appeared to be a need for an exploration of the dynamics involved in teaching techniques and program development as a prelude to controlled research on the effectiveness of these classes.

Purpose of the Study

This study is an attempt to provide more specific information about the "how" of teaching as illustrated by the teaching techniques used, and the "what" of teaching as seen in the types of lessons being taught in public day-school classes for trainable mentally retarded children in Tennessee.

More specifically, the investigation attempts to provide answers to the following questions:

What specific teaching techniques are being used?

Is there any patterning to these teaching techniques or any factors which might indicate areas of teaching problems?

Is homogeneity of class, size of class, or teaching proficiency related to the use of these teaching techniques?

Do any of the techniques discriminate between more- and less-efficient teachers to the extent that a tentative check list of teaching competency could be devised?

How consistent are the individual teachers in the use of these teaching techniques throughout the school year?

What specific types of lessons are being used in these classes?

How much relative emphasis is being given to the different lesson areas?

How much and what type of individualization of instruction is being used?

Is there any indication that homogeneous grouping, class size, or teaching effectiveness might influence the amount or type of emphasis put on the different lesson areas or the way the lessons are used?

Is there any relationship between lesson areas and the type of teaching techniques used?

Review of the Literature

A review of the literature revealed no studies directly concerned with classroom teaching of trainable children. Curriculum guides (Cleverdon and Rosenzweig, 1955; San Francisco Unified School District, 1956; Fils and McAdoo, 1954; Illinois State Department of Public Instruction, 1955; Johnson, 1958; Martin, 1955; PARC, 1955; Roewer, 1952; Rosenzweig, 1954), were based on consensus, with no research to test the findings. E. M. Boggs (1954) did a questionnaire survey of programs in trainable classes, and felt there was some evidence that classes sponsored by parent groups, public schools, and private schools had somewhat different program emphases. No objective study has been made of the differences, if any, that exist in various types of classes.

Several studies had been reported in which attempts were made to study changes in the children's behavior after a period of time in special classes (Fils, 1955; Goldstein, 1956; Guenther, 1956; Hottel, 1958; Johnson and Capobianco, 1956). None of these studies investigated or controlled the factor of possible differences in school experiences according to type of lessons taught, type of teaching techniques used, or skill of the teacher. Such differences would seem to have a direct bearing on how much a child gained from the special training.

A few follow-up studies have been made to determine ultimate adjustment after special class experience; unfortunately, these studies did not use control groups, and so there is no direct measure of the influence of the special training (Delp and Lorenz, 1953; Jewell, 1941; Rice, 1954; Saenger, 1957). Again, in these studies, no investigation was made as to type of program or specific techniques being used in the classrooms.

In the last analysis, classroom programs can be only as effective as the teaching involved. The final answer has not yet come in studies of teaching effectiveness even in regular classes; the complexity of the problem has been pointed out by several writers (Anderson, 1954; Barr, et al., 1953, 1955; Cogan, 1956; Hanawalt, 1957; Ryans, 1953). It is not surprising, then, that little study has been made of teaching efficiency in classes for mentally retarded children. A report from the U. S. Office of Education (Mackie, Williams, Dunn, 1957) has taken the first step in presenting opinions on competencies needed by teachers of the mentally retarded. Further clarification may be needed for teachers of trainable children. Measures of pupil progress and follow-up studies with control groups should be the next steps in measuring teaching effectiveness in trainable classes. Research will be limited until adequate measures have been devised which will provide some sort of objective, external criteria of pupil progress.

Scattered studies on learning of severely retarded individuals reported by C. G. Aldrich and E. A. Doll (1931, 1932); W. I. Gardner (1958); S. Gordon, N. O'Conner, and J. Tizard (1955); and F. M. Loos and J. Tizard (1955) have given some indication of the types of details we should look for in teaching effectiveness. Their studies have brought out the importance to learning, within this IQ range, of such factors as motivation, attitude, and interpersonal relationships. More learning studies with application to the classroom are needed (Dunn and Capobianco, 1959).

The absence of studies directly concerned with classroom teaching of trainable children and the implications from evaluative studies of the benefits of training such children seem to indicate a need for further investigation of classroom procedure and methods. Studies of teaching effectiveness in regular classes and of the learning of trainable retarded individuals have provided some guidelines in the direction of exploratory research. This report is the result of such research.

Method

A pilot study was conducted in Louisville, Kentucky, in the spring of 1957 with five classes for trainable mentally retarded children in a school sponsored by the local parent association. Through this study a technique of observation was developed in which two observers alternated every 20 minutes in dictating running accounts into a tape recorder during class periods. Included in these accounts were verbatim reports of what the teacher said, descriptions of teacher activities, gestures and other nonverbal interactions, and descriptions of teacher-pupil interactions. As often as possible, descriptions were given of the settings in which the behavior occurred.[1]

With the above method of data collection, 29 day classes for trainable white children in Tennessee were included in the study reported here. This included all such classes in the state for the school terms 1957-58 except one in which the teacher changed in the middle of the year and two others which were started late in the fall. Eleven of these classes were in three cities; two towns had two classes each; the other 14 classes were found, singly, in counties, towns, and cities across the state. The classes were located in separate schools, regular schools, in housing development buildings, in a building with a regular kindergarten, in a separate cottage, and one had a two-room country school to itself.

Each of the 29 classrooms included in the study was visited twice during the 1957-58 school year. The first visit took place shortly after the middle of October; the second, between April 15 and the close of the school year. With each visit, a 100-minute observation period (five 20-minute protocols) was recorded on tape. This was later typed for detailed analysis. The order of visits was determined only by an attempt to keep transit time to a minimum and by the work schedule of the two investigators. In each case, the county or city superintendent was notified in advance of the probable date of visitation; as a result, all but two of the teachers were expecting the visits.

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[1] A full description of the recording procedure can be found in the original report of this study (Hudson, 1959). The approach and procedures for observation as described by R. G. Barker and H. F. Wright (1957) were used as far as possible. The consistency of observations of the two observers was tested by a detailed comparison of simultaneous observations before the study began. A satisfactory percentage of agreement was assumed when a percentage of 94 or above was consistently reached through a measure which involved dividing the number of items on which both observers agreed by the mean number reported by both observers. This percentage is only an estimate of observer agreement, since all it shows is that both observers were seeing nearly the same thing; it does not take into account the fact that a detail may have been reported erroneously or missed by both observers.

The principal investigator attended preliminary inservice training meetings of the teachers, during which the observation technique and some of the purposes of the study were explained. The teachers made helpful suggestions for carrying out the classroom visits. The investigators felt that these preliminary meetings were responsible for much of the rapport that was in evidence between teachers and investigators; cooperation by the teachers was outstanding throughout the study.

Typed copies of the protocols were analyzed in detail. The information was categorized, and descriptive statistics were used to investigate two major factors:

1. Types of teaching techniques used—
    - Patterns or clusters in the use of teaching techniques which would indicate areas of teaching problems
    - The effects of homogeneity of grouping, class size, and teaching effectiveness on the use of teaching techniques
    - More specific techniques which seem to be related to teaching effectiveness
    - Consistency in use of the teaching techniques.
2. Types of lesson areas taught—
    - Relative emphasis given to different lesson areas
    - The amount and type of individualization of instruction used
    - The effects of homogeneity of grouping in classes, class size, and teaching effectiveness on use of lessons
    - Relationship of teaching techniques to lesson areas.

A percentage-of-agreement measure was used in determining the reliability of categorization. The statistical procedures used will be mentioned briefly as the findings are discussed later in this report.[2]

During the preliminary meetings with the teachers, stress was placed on the need for observing a "typical" day. It was felt that the cooperative aspects of the study were more important than any attempt at rigid control of this factor by unannounced visits. One point brought out by the teachers in the preliminary meetings was that trainable children need the security of a known routine, and any major changes in the day's program would upset them. There was little evidence of this sort of change and its consequent effects during any of the class visits.

A related point should be noted here. It is probable that a teacher will "rise to the occasion" when visitors are present. For this study, this would seem more an advantage than a disadvantage, since it would tend to give a good example of possible procedures. There is no way of controlling a factor such as this, but the problem would tend to be minimized since it would be a "constant" factor in each classroom. The repetition of observations in the spring would also help provide a broader sample of behavior. In this study the teachers were considered to be intelligent, professional people interested in their work and anything that would help them understand and do their work better. The validity of any other approach might be as much open to question as is this one.

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[2] This monograph contains an abbreviated description of data collection, statistical procedures used, and findings of the total project. For full details, the reader is referred to the original report (Hudson, 1959).

TABLE 1
INFORMATION ON THE 29 PARTICIPATING TEACHERS

	Factor	Frequency
Age: N=29	20-29	5
	30-39	8
	40-49	11
	50-59	4
	60+	1
Previous experience with trainable children (in years): N=29	0	8
	1	4
	2	8
	3	4
	4	1
	5	4
Teaching experience with educable and/or normal children (in years): N=28 (Mn: 7.18; Range: 0-24)	0	6
	1-2	4
	3-4	2
	5-6	3
	7-10	5
	11-15	5
	16+	3
Degrees held: N=28	None	13
	B.A.	12
	M.A.	3
Certification: N=28	Elementary	15
	Secondary	2
	Provisional	5
	Permit	6

It was not possible to obtain background data on all of the teachers. Three were men; 26 were women. Only two, both women, were not married. Table 1 shows the age range, years of experience teaching trainable, educable, and normal children; college degrees; and type of certification.

RESULTS: TEACHING TECHNIQUES

Forty-three specific teaching techniques were identified and categorized according to eight major areas of teaching methods. The eight major areas were defined in terms of the way the techniques were used, i.e., the apparent intent or reason of the teacher for using each particular technique. For this analysis, the five 20-minute observation protocols of all 29 teachers for the *fall only* were analyzed in detail. The 43 teaching techniques and their classifications, along with an indication of their frequency of use, are as follows with rank-order given in parenthesis:

1. Feeling-Tone.
(Total times used: 2284)

Gives personal recognition, caress, greeting, smile, look, conversation	1324	(7)
Gives personal admiration, compliment, or recognition for something child had or did	129	(30)
Uses politeness with children; consideration; treats children like grownups	418	(20)
Original ideas of children not related to lesson are acknowledged (accepted or rejected); teacher may go on and talk about it in a sentence	377	(22)
Teacher takes part in group activities, not as a leader, but takes turns with children, plays game along with them	36	(40)

2. Guidance and Reinforcement.
(Total times used: 8402)

Develops a concept; explains, reminds, relates known to unknown; answers own rhetorical question; elaborates; tells how or what	3094	(2)
Acknowledges response as right or wrong; corrects asked-for response; requires word referent to what child said	2505	(3)
Gives verbal assistance; talks or sings along with children; prompting	542	(17)
Acknowledges child's response by repeating exactly what child has just said	455	(18)
Asks child a question to stimulate thinking; prompts or guides	1806	(5)

3. Individual and Group Control.
(Total times used: 1266)

Removes child from group, for isolation; may give something to do	11	(42)
Removes interfering stimuli; takes something away from child more or less casually; little or no talk about it	58	(37)

Tells child to conform, sit, or be quiet if child is doing what he is told not to do or not doing what he is told to do	767	(12)
Uses touch-control; calms child by touching him	265	(26)
Warns in supportive way; tells what *not* to do	108	(33)
Blames, scolds, threatens without following up; physical punishment; non-supportive control	54	(38)
Distracts; gives something to do without making a fuss; not isolation	3	(43)

4. **INVOLVES CHILDREN IN LESSON.**
(Total times used: 5034)

Calls on child; assigns work; response indicated; not rhetorical question; may repeat if no answer given	3637	(1)
Acknowledges child's original response directed towards lesson; may explain	1289	(8)
Gets children to help each other	19	(41)
Asks for volunteers; may imply an indirect response; asks if any child wants to do something	89	(34)

5. **MOTIVATION.**
(Total times used: 3431)

Praises, rewards group and individual	1267	(9)
Challenges; competition and rivalry	367	(23)
Appeals to interests; fun, games, things they like	568	(16)
Explains cause and effect: "if this . . . then this," something good; helps children see a reason for doing something	118	(32)
Appeals to desire to please teacher or to get teacher's attention (sit by teacher; "I will be happy if . . . . ," etc.)	85	(35)
Urges to start; encourages or urges to continue	1026	(11)

6. **NONVERBAL TEACHING.**
(Total times used: 4085)

Touches child; leads to seat; support	345	(25)
Uses physical guidance; guides movements so child can take over gradually as he gets the feel of it	145	(29)
Uses gestures; may include or imply visual aid or demonstration	1814	(4)
Writes on board, child's paper, etc.	158	(28)
Uses visual aids; holds up something to show the children	415	(21)
Assists child in some way; takes or gives something; not touching child	1208	(10)

7. **STRUCTURING THE TEACHING SITUATION.**
(Total times used: 2284)

Gets children's attention any time	675	(14)
Gives directions about equipment or position for an activity; may explain	714	(13)

Introduces what comes next; decides what to do; may discuss it with the children	637	(15)
Starts children in clean-up	219	(27)
Sends children on errand out of room	39	(39)

8. TEACHER-CENTERED.

(Total times used: 2364)

Writes own records, plans; makes class materials, etc.	76	(36)
Does things herself instead of letting children do them	1372	(6)
Goes out of room	118	(31)
Repeats her own words or statement with no attempt to vary words for instructional purposes	449	(19)
Teacher interacts with matron, other adults	349	(24)

These categories, as defined, supplement each other in that any specific technique in any major area might be used as a method or means of getting results in any other major area, e.g., guidance might be used in teaching a child control, or motivation could be part of any structuring of a lesson preparation or clean-up.

There seemed to be rather wide differences in amount of use of specific teaching techniques within any major category. There were also differences in the amount of use of the eight major categories themselves.

Inspection of amount of use of the major categories and the specific techniques within each one shows that the teachers, as a group, tended to use certain specific techniques more than others. The 11 most used techniques (roughly, the first quartile in rank) were used 20,324 times. In this first quartile, three guidance and reinforcement techniques were most often used; two techniques in involving the children in the lesson were next; two nonverbal teaching techniques were third; two motivation techniques were fourth; one teacher-centered technique was fifth; and one feeling-tone technique was last. This is the same relative emphasis that was given to the major categories in general, except that no structuring the teaching situation or individual or group control techniques appeared in this first quartile of the specific techniques. The techniques in this first quartile accounted for 64 percent of the total frequency. (Q_2 total: 6017; Q_3 total: 2321; Q_4 total: 470; total f: 29,150).

The general conclusion would be that teachers of trainable children seem to be spending a large proportion of time in attempting to get a response from the children, acknowledging and encouraging any response, and explaining concepts and activities. Nonverbal techniques involving gestures and assistance are much used, as would be expected with this type of child. Giving some sort of personal recognition may be related to motivation as well as to feeling-tone since it, too, is among the most used techniques. It is also worth noting that teachers of trainable children seem to spend a relatively large amount of time in doing things themselves which the children might conceivably be able to do. Included in this category were such items as shutting a door, getting out materials, moving furniture, etc. The type of child the teachers are working with probably influences the frequency of this last technique.

Another conclusion would be that individual and group control techniques are not used as frequently as one might expect in trainable classes. This major category was the least used of the eight. Only the specific control technique of telling a child to conform, etc., was much used. It appears that these children are able to learn self-control in a group situation so that relatively more of the teacher's time can be directed towards other aspects of learning.

In the light of this evidence as to the most used teaching techniques, it would appear that teachers of trainable children are spending more time with techniques relating to the learning process than those which would be called "babysitting." Only teacher-centered techniques seem directly related to what might be considered babysitting.

The question of how much the type of technique used is influenced by the type of handicap the child has cannot be answered without further study of other types of children such as educable retarded, crippled, and normal children. It may be that teachers will tend to use this sort of approach with any young child, regardless of the type of handicap. Also, the problem of which techniques produce the best results must wait for further research in which control groups are used and in which adequate measures of the children's progress are devised. A later section of this report will throw some light on this problem.

Teaching Technique Patterns and Common Factors

Since frequency of certain teaching techniques seemed to suggest that these teachers were following some sort of pattern, an attempt was made to determine what these patterns were composed of and how they were used. For this purpose, a cluster analysis was made of the teaching technique items from the fall observations.

TABLE 2

INTERCORRELATIONS OF TEACHING TECHNIQUE CLUSTERS

Cluster	I	II	III	IV	V	VI	VII
I		−.22	.01	.07	−.15	.57[1]	.23
II			.04	.24	.03	−.02	.003
III				−.21	−.02	.29	.13
IV					.06	.39[2]	.21
V						.07	.15
VI							.34
VII							

NOTE: Any correlation in the above table would be significant at the .05 level of confidence if it exceeded .381, and at the .01 level if it exceeded .487.

[1] Significant at .01 level.

[2] Significant at .05 level.

In brief, the statistical approach involved computing Spearman rank-order correlation coefficients for all 29 teachers for frequency of use of the 43 subcategories of the fall protocols in order to show interrelationships among all the categories. From the correlation matrix, a cluster analysis was run by the Tryon procedure (R. C. Tryon, 1939). Seven clusters were identified. When the degree of independence of the clusters was computed, to see if they really did represent discrete patterns, only three significant interrelationships were found. This is shown in Table 2.

The apparent independence of most of the clusters warranted an effort to determine what teaching areas the clusters seemed to include. Therefore, they were submitted to six people (two graduate students in psychology, two teachers, one state supervisor of special education, and one coordinator of special education in a college) for naming, so that a consensus could be added to the analysis of the principal investigator. The results are given in the following description of the clusters.

Cluster I. Individual and Group Control.

—Touches or steers child in supportive fashion; leads to seat.
—Sends child off by himself, or out of room, when he cannot cooperate or conform.
—Casually removes interfering stimuli with little or no talk about it.
—Gets or tells child to conform or do what he should be doing; he may not be misbehaving.
—Touch-control; calms child by touching him.
—Warns in a supportive fashion; tells what not to do, without explaining why.
—Distracts; gives child something else to do without making any fuss over the behavior to be stopped.
—Nonsupportive; blames, scolds, threatens, gives physical punishment.
—Does things herself instead of letting children do them.

This was unanimously considered by the consultants to be a cluster in which individual and group control is reflected. Nonverbal techniques are used as well as verbal.

Cluster II. Getting the Children Willing to Start and Continue Working.

—Gestures used for communication, as visual aids.
—Writes on board or child's paper.
—Use of visual aids such as movies, pictures, charts.
—Praise or reward; comments to encourage.
—Challenges by appeal to rivalry or competition.
—Acknowledges or accepts response as right or wrong.
—Acknowledges child's response by repeating exactly what the child has just said.
—Calls on child for a verbal or action response, but not by using a question.

—Repetition of teacher's words or statement; no attempt to vary words.

The teacher- or authority-centered aspects of this cluster were noted by most of the consultants. The consensus was that this is an instructional cluster, designed to guide or motivate the children so they will be willing to start to work and continue to participate in the lesson.

Cluster III. Building up a Sense of Personal Worth in the Children.

—Individual recognition of the child, not associated with the lesson; greeting upon arrival, smiling.

—Personal admiration, compliments or praise for something the child has or did.

—Politeness with the children; consideration; treats children like grown-ups.

—Asks, tells, or gives child choice of what comes next.

—Sends child on task or errand out of the room.

There was unanimous agreement among the consultants that the unifying characteristic here is one of pupil acceptance and recognition of the children as individuals. It would be a basic part of teacher-pupil relationships, and involves building up a sense of personal worth in the children.

Cluster IV. Structuring or Guiding the Learning.

—Physical guidance; guides movements so child can take over gradually as he gets the feel.

—Gives direct physical assistance to the child; moves a chair, hands something, helps with something the child is trying to do.

—Tells or directs children to clean up in preparation for the next lesson.

—Concept building; explains, reminds, relates known to unknown, tells how, etc.

—Teacher uses own prestige as motivational reward: "You may sit by the teacher," etc.

—Urging or encouraging to start or continue work.

This cluster was, in general, labeled as a motivating, guidance, or way-pointing cluster. The two graduate consultants with psychological orientation felt it was more maternal than pedagogic. Those in education pointed out the gradualism in instruction, transition from one activity to another, and the individualization involved—all aspects of structuring the learning situation.

Cluster V. Encouraging Cooperative Interpersonal Interaction.

—Asks or gets children to help one another.

—Asks for volunteers; asks if any child wants to do something or knows an answer to a question.

Both the social interaction and cooperation, and pupil participation aspects were pointed out in this cluster by all consultants.

Cluster VI. Providing for a Mind-set or Attention.

—Arousal of interest by "if this . . . then this" statement; helps children see reason for something.

—Has children get equipment, move furniture, or change position for a lesson.

—Gets children's attention, verbally, before starting or during a lesson.

The relationship of Cluster VI to Cluster IV was mentioned by two of the consultants. In general, it was felt that this cluster involved fostering pupil participation in the sense of providing a mind-set and/or securing attention to be ready for a lesson.

Cluster VII. Drawing from the Children—as Opposed to Pouring in—on the Verbal Level.

—Original ideas of the children that are unrelated to the lesson are *not* acknowledged.

—Asks guiding questions to stimulate memory, thinking, or association in the sense of giving a clue.

—Teacher does *not* interact with matron or other adults.

This was described in general as a more child-centered example of teacher-pupil interaction in which ideas of the child are drawn out. The fact that a teacher who is highest in this is lowest in interacting with other adults would further the child-centered aspect; by not acknowledging extraneous comments, there would be no distracting from the subject at hand.

These seven clusters appear to represent seven problem areas in teaching trainable children; namely, how to ensure that the children are: controlling themselves (I), willing to work (II), feeling secure (III), learning how to learn (IV), getting along with others (V), paying attention (VI), and contributing relevant ideas (VII). The contents of these clusters throw further light on the problem, discussed previously, of how teachers of trainable children seem to be spending their efforts.

If frequency of use of the items within a cluster is taken as an indication of the importance of a problem to the teachers, Cluster II, getting the children willing to work, came first with a total frequency of 11,067. The next most used cluster was Cluster IV, structuring or guiding the learning, with a frequency of 5777. It should be noted that nearly twice as many contacts were used in Cluster II as in Cluster IV. The pattern in Cluster II is one of using visual aids, praising or challenging, calling on for a response, and acknowledging the response. In Cluster IV, the pattern is one of more direct and personal assistance, including physical assistance, explanation, and urging. Cluster II may be reflecting the past experience and training of these teachers in regular education. Cluster IV would seem to be a more constructive and productive approach. Further research is needed, however, to measure the contribution of each approach to the children's learning.

Three other clusters received about an equal amount of emphasis: Cluster I, individual and group control (f: 2983); Cluster III, building up a sense of personal worth (f: 2547); and Cluster VII, drawing relevant ideas from the children (f: 2532).

In Cluster I, the teacher-centered technique of doing things herself, which was in the first quartile in amount of use, is seen here to be related to control. One might question whether doing things yourself instead of letting the children do them might contribute directly or indirectly to control problems (i.e., it might relate to the theory that children who are busy and feel useful are happier and less of a problem) or whether, in a certain type of class, especially composed of younger or more hyperactive children where control would tend to be more of a problem, a teacher must do more because the children are less capable. The cause-and-effect problem here might be worth more study.

It is interesting to note that in Cluster III, which relates to feeling-tone techniques within a classroom, consideration of the children's feelings might also involve giving a child some choice in what he is to do and helping him to feel important by sending him on errands. The relative rarity of the latter item in this study, used only 39 times in the fall, might indicate that teachers of these children need to be more aware of such possibilities, even to fabricating errands if necessary.

Cluster VI, providing for a mind-set or attention, would also seem to be an obvious problem with trainable children. Yet, the frequency of use of the items in this cluster is only 1507. It may be that the categorization, in its specific detail approach, did not really cover this area. Or, it may be that teachers are not aware of the need for such an approach in any learning problem and have not yet developed adequate techniques. The intercorrelation with Cluster IV, guiding the learning, seems only to highlight the importance of this problem in guiding learning. The even higher correlation with Cluster I, control, would seem to reflect the difficulties inherent in getting these trainable retarded children to focus attention. The higher correlation also suggests that when the children move about the room in order to change position for a lesson, there might be more interaction among the children, more arguments over who was to sit where, and thus more chance for control problems. A teacher, knowing these possibilities, could try to structure the situation so that trouble would be minimized.

Cluster V had a relatively low frequency (f: 108) and only involved two items. The fact that the cluster did appear, and seemed to be discrete, suggests that this might be an area which teachers of trainable children should recognize as a teaching problem. Helping these children to feel useful and getting them to take part in activities related to group living would seem important aspects of success in living in the home and the community. The scarcity of items in this cluster again raises the question of whether the categorization really tapped this area adequately. It should be possible to define and test more techniques that might contribute to the problem implied in this cluster.

All that a cluster analysis really does is show which items tended to go together. Since these clusters do seem to have some value in pointing up some of the major teaching problems with trainable children, they probably should be considered in any further study which attempts to measure the value of the different techniques. There may also be implications for other types of teaching. Only further research can give the answer.

Class Homogeneity, Class Size, and Teaching Skill

So far, the analysis of the data has dealt with frequencies and patterning in terms of relative amount of use. The next question was whether or not situational factors, such as homogeneity or heterogeneity of the group, size of class, and factors related to skill in teaching might make any difference in the way these techniques were being used. For this analysis, the 29 teachers were divided into three comparative groups.

Homogeneity of the classes was determined on the basis of whether the class was in a center where two or more classes were in operation and the children were divided according to age and/or ability, or whether a teacher had the only class in her area, with the children having a wide mental and physical age range. According to these criteria, there were 12 teachers in the homogeneous group and 14 in the heterogeneous group. Three classes were divided on some other basis and were not included in this analysis.

In grouping according to size of class, a class was considered small if nine or less children were enrolled and large if there were 16 or more pupils. Under this specific definition of class size, there were seven classes in each group.

Skill in teaching could only be estimated through a process of ranking the teachers since it was not possible to obtain external criteria, such as before-and-after measures of the children's progress. Three independent rankings were obtained: One from a consultant, who had done extensive observations in 21 of these classes as part of an earlier study; the other two rankings were made independently by each of the observers as the classes were visited. The problem of estimating effectiveness in teaching will be discussed further when results are presented for that classification.

The statistical treatment involved tabulating frequency scores for each teacher for both the eight major categories and the 43 subcategories from the five 20-minute observations protocols in the fall. Mean differences were tested separately for each teacher classification system by t-tests, with degrees of freedom dependent on the tenability of the hypothesis of homogeneous variances.

The following listing gives the categories which discriminated among the three teacher classifications in terms of frequency of use. Since this was an exploratory study, a significance level of .20 was accepted. Significance levels are given in parentheses; where more than one teacher classification group is involved, the significance levels are given in respective order.

Homogeneous group teachers more frequently used:

- Total control (.20)
- Tells to behave (.10)
- Supportive warning (.10)
- Praises (.20)
- Verbal assistance (.20)
- Total motivation (.01)
- Challenges; rivalry (.20)
- Shows cause and effect (.05)
- Urges to work (.10)
- Total nonverbal (.05)
- Uses gesture (.20)
- Total structuring of lesson (.10)
- Gets attention (.10)
- Repeats self (.20)
- Total involving children in lesson (.20)

Homogeneous group and top-ranked teachers more frequently used:

- Total feeling-tone (.05—.05)
- Personal compliment (.01—.10)
- Personal recognition (.10—.10)
- Total guidance (.01—.20)
- Explains concept (.10—.20)
- Praises (.01—.10)
- Physical guidance (.20—.10)
- Writes on board, etc. .(10—.20)
- Sends on errand (.10—.05)

Top-ranked teachers more frequently used:

- Guiding questions (.20)

Homogeneous group and small-class teachers more frequently used:

- Appeals to interests (.20—.20)

Small-class teachers more frequently used:

- Introduces lesson (.10)

Large-class and bottom-ranked teachers more frequently used:

- Total teacher-centered (.20—.20)
- Does things herself (.05—.20)

Large-class teachers more frequently used:

- Writes own records (.05)

Heterogeneous group teachers more frequently used:

- Asks for volunteers (.20)

The close relationship between the homogeneous group and top-ranked teacher group should be noted. The only items that do not seem consistent in the two groups are the control items for the homogeneous group. Further analysis showed that the four primary classes in the homogeneous group required four times as many control contacts as the other eight classes in the first 20 minutes and averaged three times as many contacts during the five 20-minute periods. It appears that age of children does have some influence on type of teaching techniques used.

While fewer items discriminated between small- and large-class teachers, those for the small-class teachers are most consistent with the results for the homogeneous and top-ranked teachers. A tentative conclusion here would be that better teaching goes on in smaller and/or more homogeneous groups. The only area that the bottom-ranked teachers used significantly more was the teacher-centered area; mention has already been made of the implication that the teacher-centered items would seem to show more of a babysitting than a learning situation. It should be noted here that the homogeneous group included four top-ranked teachers and two bottom-ranked teachers (out of 12), while the heterogeneous group had four bottom-ranked and one top-ranked teacher (out of 14). Although the loading was in the direction of the results, it was not too heavy a loading or even completely consistent.

These differences among the three teacher classifications[3] suggest that both qualitative and quantitative differences exist in types of teaching techniques used in the first part of the school day. Most of the classes used some combination of flag salute, singing, devotional lessons, etc., at the beginning of the day. Also, the analysis of use of control items would suggest that it may take a while for trainable retarded children to settle down when they first come to school, especially when younger children are concerned.

Teaching Techniques and Teaching Skill

The previously mentioned relationship between type of grouping, size of class, and skill in teaching is not as simple and clear-cut as it might seem. Age of the children has been mentioned as one factor. Lack of external criteria by which to measure success in teaching meant that only a tentative and relative comparison could be made through using a ranking technique. One of the problems in ranking was that no person other than the principal investigator and research assistant had visited all of the classes. Nevertheless, by dividing the teachers' ratings into quartiles and by comparing these quartiles with the ranking of a state consultant who had visited 21 of the classes, perfect agreement was shown for those teachers who had been seen in both cases.

Both investigators attempted to increase the objectivity of the ranking by making independent estimates of a teacher's effectiveness as a class was visited, making notes on a separate file card for each teacher, and independently deciding the relative position of that card among the other 28. No joint discussions or comparisons were made until all the visits were completed in the fall, and then the only discrepancies appeared in two borderline cases among the top seven and bottom seven. However, agreement was quickly reached. This ranking procedure was repeated in the spring as a test of the consistency of the ranking; only in one case was a consensus required even though three of the original teachers were no longer in the two groups, and three new ones had been added.

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[3] The data on which these variations are based are different than that given in the original report (Hudson, 1959) because of later data analysis.

Since there were no external criteria to supplement the ranking procedure, there is a possibility that items which discriminate between the two groups may be only a reflection of the original ranking. The relationship between the homogeneous group and top-ranked teachers would suggest that some factor other than the original ranking was operating. In addition, when the clusters were analyzed to see if they discriminated between top- and bottom-ranked teachers, only one cluster showed a relationship at the .01 level—Cluster III. This cluster was heavily loaded with the type of feeling-tone items which discriminated between top- and bottom-ranked teachers. Since only one of the clusters discriminated, the supposition that there were qualitative differences between the original ranking and the specific techniques as identified would tend to be reinforced.

Besides the question of the relationship between the ranking and the items which discriminated, there is also the problem that the ranking must be considered only relative. While the top-ranked teachers were "good" teachers in many ways, the bottom-ranked teachers were not necessarily "bad" but only "less good," and obviously used many good techniques. Thus, there was an overlapping between the two groups and not a clear-cut difference. Perhaps teaching effectiveness itself is only a relative thing, and includes many facets.

Another question that must be considered here is: What differences, if any, existed between the two groups of teachers and the type of children they were teaching? As mentioned earlier, complete information was not available. For the nine top-ranked and the eight bottom-ranked teachers who were in either fall or spring classifications, the top-ranked teachers reported somewhat more professional preparation as seen in state certification and number of college degrees, and the bottom-ranked teachers reported somewhat more years of experience in regular teaching and teaching trainable children. Bottom-ranked teachers were also somewhat older. No tests of significance were run, since the numbers in each category were too small. The differences are probably not significant.

Comparison of the two groups of children were made for those teachers who were below the first quartile or above the third quartile *both* fall and spring (five top-ranked and six bottom-ranked). A chi-square test was run on the frequencies in the diagnostic categories. Top-ranked teachers had a significantly greater proportion of cerebral palsied children and children whose etiology was unknown (.03 and .01 respectively). There were no differences in mongoloid or other categories ("other" includes the types of etiology which are comparatively rare). Bottom-ranked teachers had a significantly greater proportion of brain injured children (.06 level).

The t-test was used to compare differences between the two groups of children on IQ and chronological age variables. The top-ranked teachers had children whose IQ's were higher at a significance level of .10 (t: 1.67; df: 136) and who were significantly older at the .01 level (t: 3.37; df: 134). However, for all teachers who had been in either quartile at any time, the top-ranked teachers had a wider range of ages in general, and the two teachers who were added in the spring to the top-ranked group both had primary classes; therefore, the differences in chronological age were much less in the spring when all seven teachers in both groups were compared.

It may be that less "teaching" is possible in larger classes, in classes with a wider age and ability range, in classes of children who tend to be younger, lower in IQ, and in classes where more of the children are brain injured. The picture would be further complicated, perhaps, for older teachers with less professional training.

With all of the preceding complications in mind, further analysis was made of the items which seemed to discriminate between top- and bottom-ranked teachers through the additional refinement of the 43 subcategories from the fall analysis into 111 categories. Using this new categorization, analysis was made of the five 20-minute observations protocols in the spring for those teachers ranked as top or bottom at that time. The same F ratios and t-tests used in analyzing the fall data were applied. The following description is given, by levels of significance, for those items which discriminated between the two groups of teachers. The close similarity with results from the fall analysis should be noted.

Top-ranked teachers more frequently used:

at .05 level of significance

Sends child on errand out of room.

Teacher shows consideration for child, for his feelings, situation, ideas; may give sympathy.

Has one child act as leader or helper for the day or for a particular activity.

Feeling-tone in general; anything which would build up a child's feeling of acceptance, self-confidence, feeling of rapport.

at .10 level of significance

Praises or gives recognition for something child did, not related to lesson, at home and brought to school, volunteered at school, etc.

Rejects child's original ideas not directed towards the lesson.

Reminds, relates something new or unknown to a known.

Gets children's attention before starting a lesson.

Teacher goes out of the room alone, not with a child.

at .20 level of significance

Admires or compliments the child on something personal; not related to performance or conditions in a lesson.

Child's own original ideas acknowledged, accepted; not related to lesson.

Greets child as he enters or as teacher first sees him.

The guidance area in general involving learning situations. (Reinforcement was a separate area in this refinement of items.)

Asks guiding questions to stimulate memory, thinking, association.

Praises, elaborates to bring real feeling of success or achievement; not perfunctory.

Gestures used to acknowledge child's response or request.

Gestures used for communication, without words.

Uses objects as visual aids; distinct from using movies, pictures, charts.

Prompts child, but then lets him continue by himself.

Tells what will come next.

Either asks the children what they want to do next, or gives a choice of activities.

Sends child on errand inside room to get or do something, etc., for the teacher.

Bottom-ranked teachers more frequently used (i.e. top-ranked teachers did relatively little):

at .05 level of significance

Rejects or ignores child's original response directed toward the lesson.

Teacher implies or expresses a doubt, tells child she wants to see *if* he can do something.

Uses nondirective "would you like" in trying to motivate the child; probably more of a feeling-tone involved, since often does not really give a choice.

at .10 level of significance

Tries to get child to respond to question or answer when called on.

Gives direct, personal assistance to the child in some way; involves equipment since touching the child is not involved, nor giving or taking something.

Does activities about the room instead of letting children do them (i.e., pulling shades, closing doors, cleaning up, etc.).

at .20 level of significance

Complains and blames in the sense of a negative approach that is no help to the child.

Teacher-centered activities in general; teacher is doing things with no interaction with the children.

Gets out or puts away materials herself instead of having the children do it.

The general picture of a "good" teacher which emerges from the above is one who is skillful in developing independence, initiative, self-reliance, and a feeling of personal worth in the children; who has a class where motivation is good, interest is high, the children's attention is held during a lesson, and the children get a real feeling of success and confidence from their work; who encourages the children to do things for themselves, and yet gives adequate guidance at each step in learning; and who sets limits so that the children know what to expect and how to carry on.

The seeming contradiction, for the top-ranked teachers, in both accepting and rejecting volunteered responses by the children which were not related to the lesson may imply only that good teachers know when to accept and when to ignore comments by the children that might distract from the lesson.

In a few major categories in this spring analysis, there were both plus and minus subcategories where top-ranked teachers used most of certain techniques, and bottom-ranked used others most. There seems to be a principle that could be called a "constructive approach" that would explain these differences within any one major category. For example, in the motivation category, elaborating on praise (by the top-ranked teachers) would seem more constructive than expressing a doubt or asking "Would you like . . .?" when the child has little choice. Or top-ranked teachers have less need to urge children to answer when called on than do the bottom-ranked teachers. In the nonverbal category, the emphasis by the bottom-ranked group on doing more things for the child would not seem as constructive as letting the children do things for themselves or using gesture signals or objects as visual aids which were used more frequently by the top-ranked teachers.

The patterning of use of the major and subcategories in which the similarity among homogeneous, small-class, and top-ranked classifications appeared on the one hand, and the heterogeneous, large-class, and bottom-ranked classifications appeared on the other, would also seem to be related to this principle of a "constructive approach." In the motivation category, urging to start or continue work that the homogeneous group teachers used in the fall has been separated in the spring from trying to get the children to respond to a question or answer when called on by the bottom-ranked teachers. So, too, it would seem that the consistency with which teachers from large classes and the bottom-ranked teachers used the teacher-centered categories to a significantly greater degree than their comparative groups of teachers might be related to a less constructive approach. Whenever teachers are, for any reason, not working directly with the children but are going about their own business, they are not contributing directly to the learning of the children.

There is also a possibility that some aspects of this type of teacher-centered behavior may be reflecting only a lack of pre-planning and organization so that classroom time must be devoted to record keeping and preparation of materials instead of working directly with the children.

Teaching Techniques and Consistency of Use

One further question about teaching techniques was investigated. This was the question of how consistent the teachers were in their use of techniques over a period of time (in this case, during the four to six months between the fall and spring observations). Only an estimate of this aspect of reliability was made. Forty-minute periods from the fall and spring protocols were compared for all 29 teachers by ranking for each teacher the frequency of use of each *major* category and by computing the Spearman rank-order coefficient between the rankings. It appears that, in general, this group of teachers was consistent for this measure in the sample of time and observation material used. For this sample size of eight categories, a rank-order correlation of .64 is significant at the 0.5 level, and .83 at the .01 level (one-tailed tests). The median for all 29 teachers was .86, with a mean of .78. All but four teachers were above the .05 level of significance.

When the subcategories were compared for consistency of use, much more variation was found. Only 19 of the 43 categories had a significant correlation from fall to spring. The conclusion is that what variation there is among the teachers in consistency of use of the techniques is reflected more in some techniques than in others.

Since there might be a question raised as to whether consistency in teaching is an asset or a liability; i.e., whether techniques *should* change as children get older or learn more, the amount of variation among the specific techniques would tend to be reassuring. When the large degree of individual differences among the teachers is seen in relation to the demonstrated consistency in use of the techniques, another question might be raised about the relationship between teacher personality patterns and habit-traits in teaching. It might be as difficult to change habits of teaching as it seems to be to change personality patterns. It might be useful, therefore, to know which techniques would respond most to training. There might also be discovered implications for the study of teaching effectiveness; group statistics and procedures used in setting up criteria of skill in teaching may not be useful for prediction unless such individual factors as personality differences are taken into account. Further research in this area would be useful.

RESULTS: LESSON AREAS

In addition to the study of the specific teaching techniques used in trainable classes, a second major area of exploration involved the kinds of lessons that were being taught. The identification and categorization of lessons was the first step. It should be remembered that there were sampling limitations in that the classes were visited only part of two different days; therefore, it cannot be said for any one teacher that a lesson area was not used simply because it was not observed during the two visits. The composite picture of 29 classes visited twice at intervals of four to six months does seem, however, to give a fairly good picture of program activities in these classes.

Ninety-eight types of lessons were identified, and categorized under 15 major areas. For this analysis, the 100-minute protocols for *both* fall and spring were used. As with the identification and categorization of teaching techniques, this categorization grew out of the observations from both the pilot study and from the major study of the 29 classes.

Because correlation and integration were used by the teachers to help make the material more meaningful to the children, lines between some subject areas might overlap.[4] Therefore, in categorizing the subject area for this report, consideration was given more to devising a means of handling the data than to a precise definition of discrete learnings.

A summary of the data is given in the next chapter. From this summary it can be seen that more extensive learning experiences were given in some lesson areas than in others. Eight types of lessons were used in some way 90 or more times in the 200 minutes of combined observations. These were numbers, singing, following directions, visual and auditory discrimination, work habits, concept building, manipulative skills, and talking time. All of these lesson areas except concept building were also among the eight most emphasized. No direct lessons were observed during these 200 minutes in seven of the areas.

Relative Emphasis on Different Learning Areas

The number of times a topic is used is not necessarily an adequate measure of the amount of emphasis placed on any particular lesson area. Therefore, in order to obtain a more qualitative measure of the amount of emphasis, weights were assigned to each lesson area on the following basis: One point was given for what was considered "incidental teaching"; e.g., a topic was just mentioned one or more times, or the concept of practice was involved, as when a child was doing something but was receiving no help or instruction from the teacher. Three points were given if some short instruction, explanation, discussion, or demonstration was done; these were termed "slightly developed" lessons. Five points were given if the lesson was either fully developed as a sublesson, if it ran all through a stated lesson period, or if it were considered the major lesson period; e.g., "Now we will have our music." Lessons receiving five points were termed "fully developed" lessons.

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[4] The beginning and end of any lesson could be distinguished by the Barker technique, and correlation by three analyzers was high—even though there was overlap.

To determine the relative amount of emphasis being given to the detailed lessons and to the 15 major lesson categories, all of the weighted scores were totaled for both the fall and spring protocols. This total was termed the "emphasis index" (EI) and is shown for each lesson area in a later chapter. The rank and total weight for each of the 15 major categories are shown in Table 3.

The rank-order correlation between fall and spring weights was beyond the .01 level of significance. It can be seen from Table 3 that language development consistently led in amount of emphasis, although there was somewhat less total weight given to it in the spring than in the fall. Practical arts received the smallest amount of emphasis.

When the relative emphasis is considered, language development seemed to receive a disproportionate amount of emphasis. What is done most is not necessarily what is best. Some study is urgently needed to help in deciding whether language development is a profitable area to warrant the time spent on it, or whether the stress on this language area just reflects the school's high level of dependence

TABLE 3
RANK-ORDER OF MAJOR LESSON AREAS ACCORDING TO TOTAL WEIGHTS, OR AMOUNT OF EMPHASIS, FOR ALL 29 TEACHERS

Fall			Spring		
Rank	Lesson Area	Total Weight	Rank	Lesson Area	Total Weight
1.	Language Development	834	1.	Language Development	789
2.	Motor Control	434	2.	Mental Development	451
3.	Sensory Training	377	3.	Motor Control	395
4.	Mental Development	331	4.	Music	372
5.	Social Studies	327	5.	Sensory Training	371
6.	Music	305	6.	Health & Safety	370
7.	Arithmetic Concepts	305	7.	Social Studies	279
8.	Health & Safety	298	8.	Arithmetic Concepts	275
9.	Self-Help	241	9.	Self-Help	222
10.	Socialization	214	10.	Occupational Education	214
11.	Occupational Education	211	11.	Socialization	201
12.	Arts & Crafts	187	12.	Arts & Crafts	155
13.	Dramatization	137	13.	Dramatization	126
14.	Science Concepts	87	14.	Science Concepts	105
15.	Practical Arts	59	15.	Practical Arts	96

on verbalization. Language skills would not seem to be needed by trainable children to the same extent outside the school situation.

Of the more specific subcategories under language development, the talking and sharing period was used most often, unison-speaking, second; reading, third; speech drills, fourth; and "reading pictures," fifth. In relative degree of emphasis, talking and sharing time was again first; reading, second; unison-speaking, third; and writing and reading pictures were tied for fourth. Even though much of "reading" involved learning to recognize their own names, the value of the proportionate emphasis on this one area may be open to question with this type of child. When reading readiness is used as part of the program in developing each child's own capacity for thinking skills, there may be some justification for this emphasis. A problem for research would be to develop equally good progressive steps towards thinking skills in other more practical curriculum areas.

Study is also needed to discover whether there should be more variation in types of lessons geared to meet varying needs of the children according to etiology, age, and IQ level. For example, the assumption has usually been made that adjustment to such problems could be done within the lesson areas; it might turn out that more emphasis should be placed on sensory training with younger children and on practical arts with older children. These comparative rank-order results for the teachers in this state should be compared to that of other states to see if there are geographic variations in the areas which are emphasized most or least.

As a second step in this analysis, the subgroups within each of the three teacher classifications were compared for relative emphasis on each major lesson category by ranking the major lesson areas for each group of teachers according to total weight or emphasis for each type of lesson. All correlations for all the subgroups of teachers showed a .01 level of significance. This consistency in lesson emphasis probably reflects the inservice training provided twice each year in Tennessee for all teachers of trainable children. In the light of this consistency, only those lesson areas which seemed to be markedly different in ranked emphasis between any two groups were considered. An arbitrary basis was made in considering a "significant" difference: One quartile difference up or down in rank (a four-point or more difference, since there are 15 major lesson areas) was considered significant.

Table 4 gives these results. One general conclusion is that teaching skill seemed less related to lesson emphasis than to the use of teaching techniques, since there is no consistent patterning in the type of lessons emphasized between top-ranked teachers and any other group. Another conclusion is that there were fewer lesson areas involved in the spring than in the fall. The implication here would be that the children were profiting from the earlier lessons and now new learnings were in progress, though at a slower rate. It might be that lesson emphasis is more related to the type of children in the classes and to the situation in which the teacher is working,

TABLE 4

LESSON AREAS WITH A ONE-QUARTILE OR MORE DIFFERENCE IN RELATIVE EMPHASIS WITHIN EACH GROUP

Teacher Groups	Fall	Spring
Homogeneous	Arithmetic Concepts (4)[1]	Health & Safety (3.5)
Heterogeneous	Social Studies (4)	Mental Development (5)
Small Class	Sensory Training (5) Social Studies (11)	Arithmetic Concepts (5)
Large Class	Music (4) Health & Safety (5)	Mental Development (5)
Top Ranked	Social Studies (4) Occupational Educ. (6)	Health & Safety (5)
Bottom Ranked	Sensory Training (4) Physical Educ. (7)	Arts & Crafts (4)

[1] The numbers in parentheses show the number of steps of change in rank.

including size of room, type of equipment, facilities within the room, and special hobbies or skills of the individual teacher.

Another question arises concerning the value of the differing emphases in these lesson areas. Perhaps any major lesson area is as good as another for fostering a general aim such as socialization. In this case, a teacher's skill in music, or arts and crafts, could be utilized to the fullest. It remains to be seen whether the content within any one lesson area is practical and useful to the children.

It should also be noted, in Table 4, that there may be some implications in the differing lesson emphases for top- and bottom-ranked teachers. Remembering that the children in classes of bottom-ranked teachers tended to be younger and lower in IQ and with more brain injury, it is possible that the three lesson areas receiving more emphasis than in classes of top-ranked teachers reflect the more pressing learning needs of this type child. One wonders, also, whether more skill in teaching is needed in order to teach, with a step-by-step progressive level of learning, the types of lessons emphasized more by top-ranked teachers.

Individual Instruction: Amount and Type

One of the reasons that class size is kept relatively small for any type of handicapped child is the need to give individual help in learning. As part of the exploratory function of this project, an analysis was made of the amount and type of individualization of instruction being used.

For this analysis, it was noted for each lesson area whether a teacher taught one child, two or three children, a real subgroup, or whether the class as a whole was involved. Since the three teacher classifications described earlier included all but one teacher, the

TABLE 5
FREQUENCY OF USE OF INDIVIDUAL INSTRUCTION BY TYPE OF CLASS

Type of Class	No. of Classes	Works with 1 Child	Works with 2-3 Children	Works with Real Sub-group	Works with Whole Class	Total Lessons	Diff.—1 Child & Whole Class
Homogeneous	12	460	6	1	399	866	61
Heterogeneous	12	432	7	7	292	738	140
Diff.		28	1	6	107	128	
Small	7	202	5		138	345	64
Large	7	233	3	4	173	413	60
Diff.		31	2	4	35	68	
Top	7	297	2	4	214	517	83
Bottom	7	246	4	2	215	467	31
Diff.		51	2	2	1	50	

results of this analysis for these groups are presented in the more meaningful terms of use by these comparative groups. Table 5 summarizes these results.

Tennessee teachers do seem to be using individualization of instruction to a great degree. However, individualization of instruction with these teachers seems to be an all-or-none matter, since the teachers worked with either one child only or the class as a whole. They did very little with subgrouping methods that have been recommended in regular education to help provide for individual differences within a class.

Teaching skill and the type of grouping seemed related to relative emphasis on one-child and whole-class lessons; top-ranked teachers taught more one-child lessons than bottom-ranked teachers; and in homogeneous classes, the teachers used relatively more whole-class lessons than the teachers of heterogeneous classes, even though both did more one-child than whole-class lessons. Perhaps the degree of individualization may depend on teaching skill and/or the type of children in the class, as well as the type of class grouping.

Another step in analysis of individualization of instruction involved determining which lessons seemed to be used more with either the one-child or the whole-class approach. The following lists only those categories in which a 10-point or more difference existed in frequency of use:

One-Child Approach:

1. Arithmetic concepts in general, although it was apparent that the one subcategory of "numbers" accounted for most of the difference
2. The subcategory of personal sanitation, involving things like washing before handling food, blowing nose, etc., listed under health and safety

3. Lessons under language development that involved speech drills, writing, or reading

4. The subcategory of work habits, under occupational education

5. Practical arts in general, as a major category

6. Manipulative skills as a subcategory, under motor development

7. All of the major category of socialization, but especially lessons in social techniques, taking turns, getting along with others, and helping others

8. All of the major category of self-help, especially learning to wash, toilet, and dress themselves

9. The subcategory of home and community, under social studies (This was mainly discussed during children's talking time when one child mentioned something, and the teacher would give further explanations and elaboration.)

10. The major category of sensory training

11. The major category of thinking skills, especially lessons on repeating from memory and following directions.

Whole-Class Emphasis:

1. The major category of dramatization, especially using gestures to songs

2. Those lessons under language development, which included story period, roll call, and unison speaking

3. The major category of music, especially singing

4. The subcategory of games and exercises, under motor development

5. Lessons on holidays or the flag (including the salute) and lessons on chapel and saying grace, under social studies.

The differences in these lesson areas seem logical when the lessons involved are seen in detail. One conclusion would be that, although the teachers tended to do more work with the individual children in general, some lessons seem better suited to the whole-class approach. Some questions that might be raised would include the following: Is working with one child the most effective way of facilitating learning in these trainable classes, or should some type of subgrouping technique be developed too? What would be the optimum balance between the whole-class approach and the more individualized approach, and how much of each would produce the most learning in each lesson area? Under what conditions is individualization best done? Would age or IQ level of the children be related to more and/or less use of the individualized approach? When one considers that there are two kinds of learning—individual, in which the student has to learn a thing for himself and practice by himself, and group, in which a pupil can gain from watching and imitating and sharing with others—the need for more study in this area of individualization in trainable classes is apparent.

Lesson Areas and Class Homogeneity, Class Size, and Teaching Skill

Another part of the exploratory approach to the qualitative aspects of use of curriculum or lesson areas involved a comparison on several variables of the three teacher classifications previously described. One question (or variable) was whether there were any significant differences between the subgroups in the three teacher classifications in breadth of program, as seen in the number of different lesson areas taught. This number was determined by counting each lesson area once, and is herein referred to as "single" lessons. A second question was whether these comparative subgroups of teachers were using the same degree of repetition of lessons during the observation period. This aspect was approached through a measure of the total number of lessons taught. Repetition would imply use of a specific lesson-topic in related lesson areas during the day, and thus would be an indirect measure of the amount of integration or correlation of lessons. This measure is herein referred to as "repeated" lessons. A third question was that of differences in total amount of emphasis used with the lessons, as seen in total weighted scores. A fourth question involved differences in use of "incidental," "slightly developed," and "fully developed" approaches as seen in the respective weights of one, two, or three points assigned to each lesson area. The possibility of differences in all of these variables from fall to spring was also investigated.

For this analysis, the major statistical problem was to check for significance of observed differences when the scores for the three teacher classifications were tallied. Only the results for the top- and bottom-ranked teachers were investigated in detail.

As far as the amount of emphasis given each lesson area was concerned, there seemed to be some differences among the three teacher classifications. The variable of teaching effectiveness seemed to be more related to total amount of emphasis used than did type of grouping of the children or size of class. Size of class seemed to have little influence, since no significant difference was found between large or small classes in amount of emphasis *per se*. Top-ranked teachers used more of the lesson areas and gave more emphasis than bottom-ranked teachers. The implication might be that top-ranked teachers were doing more teaching.

One difference that appeared in comparing homogeneous classes with heterogeneous classes was that, in the more heterogeneous classes, more repetition of lessons was used, and thus, probably, more integration or correlation of lesson areas during the day. It is difficult to tell whether such a finding would indicate that it was more of a problem to get a satisfactory amount of learning in any one lesson when there was a wider age and/or ability range within a class, so that more repetition was needed, or whether this wider range within a class made the teachers more aware of the need for repeating lessons to ensure an adequate practice effect.

There were also some differences between homogeneous and heterogeneous teachers in amount of use of "incidental" or "slightly developed" lessons, respectively, in fall or spring, with lesson repetition. It may be that amount of repetition, in itself, is not as important as how it is done. It would seem that more study of repetition of lessons would be fruitful, if repetition is as much indicated for retarded children's learning as has been assumed. Type of grouping is probably not the only variable involved.

Both top- and bottom-ranked teachers tended to use an "incidental" approach more than one of developing the lesson topic to any degree. The incidental approach, as defined in this study, included two techniques: One was a more-or-less casual mention of the topic, with no attempt to develop a concept; the other was what might be called practice or self-teaching aspects of learning, where the children were given an opportunity to do something, but the teacher did not attempt to guide or assist with the activity at the time of observation. Obviously, the children had had some instruction, or they couldn't have gone ahead on their own.

The question arises as to the value of "incidental teaching," as defined, for trainable children. In the sense of facilitating perception and awareness as a casual mention would imply, it might be a useful technique, and the opportunity to practice a skill would be highly desirable. One implication from the findings in this area would be that, for trainable children, there should be relatively less learning of new things or even verbal review of previous learning, and more opportunity for each child to try out what he has been learning. Further study, therefore, also seems indicated for this area of incidental versus more detailed teaching. Learning studies, in particular, could help evaluate the usefulness of the casual mention, especially if repeated in varying situations, in order to increase perception and awareness. And, it might be possible to discover what the optimum balance should be between practice and introduction of new learnings. The relationship of variables (class size, skill in teaching, homogeneity or heterogeneity of grouping, and perhaps age of the children) to the use of "incidental," "slightly developed," or "fully developed" lessons should also be further explored.

The differences reported for the top-ranked teachers in amount of emphasis in different lesson areas would seem to indicate that efficiency also involves degrees of emphasis on subject matter, and not just the presence or absence of a topic.

Lesson Areas and Teaching Techniques

The type of lesson taught might be one variable influencing use of the specific teaching techniques previously discussed; therefore, this possibility was explored.

In this analysis, all of the teaching techniques used in the fall protocols were ranked according to frequency of use by all of the 29 teachers for each major lesson area. A coefficient of concordance was obtained (S. Siegel, 1956). There was no significant relationship between the type of lesson and the teaching techniques used; the same teaching techniques were used to the same degree in the different lesson areas. Although the measure used here is not too exact, and shortcomings of the categorization could have affected results, this finding would need to be considered in any further research.

USEFUL APPLICATIONS

The findings from this type of exploratory study cannot by themselves prove anything. However, if some cautions about the limitations inherent in sampling and methodology are kept in mind, it can provide some guidelines for use in teaching competencies, lesson planning, and future research.

Some Cautions

This was an exploratory study. No hypotheses were tested, and the results must be considered as tentative leads or way-pointers for further research. The number of subjects was small, and the subgroupings of teachers resulted in further limiting of numbers. Only teachers in one state were studied. These teachers may not be typical of teachers in other states where differences exist in economic, cultural, or educational factors. Therefore, the results may not be applicable to other teachers of trainable children, to say nothing of other levels of mental retardation.

One of the greatest limitations in this study was the lack of external criteria for teaching effectiveness; e.g., measures of pupil growth. Thus, conclusions in this area can only be tentative until controlled studies have further explored and tested the findings.

Another limitation was the amount of time spent in classroom observation. The periods of observation in which raw information was collected provided a better sampling of teaching techniques than of lesson areas, since in any one teacher's room a lesson that was not observed may have been taught at another time.

No analysis was made of the influence of the matron, or attendant, on the classroom situation, although observation showed that in some cases the matron might be a significant help or hindrance.

The results are based on a system of categorization that was not set up in advance but grew out of the observational material. It is assumed that any categorization would be useful if operationally defined; however, different categorizations might have produced different results. Here too, findings can be only tentative until further research is done.

Teacher Competency Check List

In this study there did seem to be teaching-technique items which discriminated between more- and less-effective teaching. When the principle of "constructive approach" is considered, homogeneity of grouping and size of class seem to be related to effectiveness in teaching and, therefore, to items which discriminated for these teacher groups.

The cluster analysis suggested seven problem areas in teaching trainable children. Considering the low degree of intercorrelations among the clusters and the high degree of correlation within each cluster, it could be hypothesized that any one item in a cluster would be representative of other items within that cluster. And yet in only one cluster did all the items discriminate between the top- and bottom-ranked teachers. Since the principle of "constructive approach" does seem consistent in explaining differences between groups of teachers, and since the lack of discrimination in many of the cluster items may be only a reflection of the fact that the bottom-ranked teachers are not necessarily "bad" at their jobs but only "less good," details of the nondiscriminating items which seemed constructive could be used in a check list of teaching competencies.

Therefore, a tentative check list of teaching competencies was constructed around these seven problem areas. The rationale behind the proposed analysis would be that items which discriminate between top- or bottom-ranked teachers, and/or "constructive" aspects of items in the various categories, could be included in any measure of teaching competencies. This check list must be considered as tentative because it has not been tested in the field; the rationale behind its construction would imply enough validity to warrant presenting the material at this stage. It was felt that there is need for a check list which teachers could use as a guideline to see where their own strengths and weaknesses lie. The more specific the items, the more the possibility that the individual teacher could try them out. Following is the tentative check list of teaching competencies:

I. Individual and Group Control: Emphasis on Preventive Aspects, on Helping the Children Develop Self-Control.

- Does not depend entirely on verbal approach; leads the child, by touch, to do what he is supposed to do
- Calms the child by proximity or touch
- Uses some sort of nonverbal signal or gesture to remind the child to conform
- Reminds the child to do what he is supposed to do
- Warns the child in a supportive way to be careful with something, what not to do
- Distracts a child from unacceptable behavior by giving something else to do
- Does not blame or complain
- May have the child sit off by himself to calm down; usually gives something else to do
- Helps prevent problems by structuring any period of movement about the room so that confusion and undesirable behavior are at a minimum.

II. Getting the Children Started on Work; Keeping Them at Work and Interested.

- Verbalization by the teacher is at a minimum; uses gestures for communication, may acknowledge a child's words with a gesture
- Uses sincere praise to bring a real feeling of achievement and success (more than a perfunctory "good")
- Acknowledges the children's response as right or wrong

- May prompt a child but then lets him continue by himself
- Uses objects as visual aids (more concrete experience; interest-arousing)
- Always seems sure the children can do what they are asked to do; does not use the technique of "wanting to see *if* the children can do it"
- Calls on the children so that they will participate in the lesson; uses little of the "lecture" approach
- Encourages self-rivalry, bettering own work
- May write on board or child's paper; emphasis is on helping the individual to do his own work.

III. Building a Feeling of Personal Worth in the Child.

- Gives admiration, compliment, recognition for something personal, not connected with the lesson (i.e., appearance, clothes, something the child did)
- Greets each child as he enters
- Shows consideration for the child's feelings, situation, ideas; may give sympathy
- Uses the polite forms, as "please," "thank you," etc., in talking to a child
- Does not "talk down" to the children; treats each one as an individual worthy of respect
- Asks the children what they want to do; occasionally gives a choice of activities
- Takes pains to give each child personal recognition during the day with a smile, look, friendly pat, etc.
- Gives different children errands or jobs in the room or out so that each can contribute something in the way of "service"
- Gives each child a chance to be a leader in different activities.

IV. Structuring or Guiding the Learning.

- Uses physical guidance of the child's movements as needed until the child can gradually take over for himself
- Relates something new or unknown to a known; reminds children of something which has already happened
- Is careful to explain a concept or idea on the children's level
- Lets the children do things for themselves with a minimum of personal help
- Tells the children, gives a prior warning, before it is time to clean up so that they can finish what they are doing and not be upset by a sudden stop to an activity
- Encourages children to do even more than they have done or thought they could do; tries to develop a real sense of achievement
- Supervises clean-up after a lesson; emphasizes work-habits; does not clean-up for the children
- Takes time before a lesson to get interest and incentive (motivation) high so that there is little need to urge the children to start or to respond when called on

- Sets "limits" with the children's help so they will know what to expect and remember the right way to act or do things; takes pains to explain how to do a thing as well as what to do.

V. Encouraging Cooperative Interpersonal Interaction.

- Encourages the children to volunteer for jobs and activities
- Encourages the children to help each other
- Sets up interest-centers for play (playhouse, sandbox, blocks, water-play, large- and small-wheeled toys); encourages cooperative dramatic play at each child's level of development; encourages interaction during free-play periods
- Simple group games are used indoors and out; fair play and teamwork are brought out in a "fun" situation
- Children are encouraged to share things with each other, to play together when using equipment
- Children are encouraged to take turns, to give the other person a chance to answer or to do something
- Children are allowed to sit by or work with each other as long as no one is disturbed; they are not confined to seats all day but have some freedom to move about, get materials, talk to each other quietly
- As the children learn how, they are given a chance to run parts of the day's program by themselves
- Different children are given turns to pass out materials.

VI. Providing for a Mind-Set or Attention.

- Gets the children's attention before starting a lesson
- Makes sure a child is listening before trying to tell him something
- Helps the children see a reason for doing something
- Waits until the children are in position before beginning a lesson; may direct the children into another position or part of the room
- Tells the children what is coming next
- If children's attention wanders, does not go on with lesson until attention is recalled
- Comments on, or compliments, those children who have gotten ready instead of calling attention to the ones who are not
- Emphasizes the listening skills of looking at the person who is talking, using ears, shutting mouths
- Keeps lessons short in the beginning; gradually lengthening the periods as the children's attention span improves; provides a variety of interesting things to do.

VII. Drawing from the Children, as Well as Just "Pouring-in."

- Uses guiding questions as clues to stimulate memory, thinking, association
- Does not let the presence of other adults distract from attention to children
- Knows when *not* to let a child interrupt the lesson with an extraneous comment
- Comments or questions a child as he is telling about something to prompt him to tell more

- Encourages children to ask questions; gives information when asked for it
- Does not reject volunteered comments by the children when related to the lesson
- Does not rush a child when he is trying to talk; allows plenty of time for the child to answer or give his own comments
- Has the children help in evaluating a lesson or experience, in telling how it went, what they liked about it, how to do it better
- Encourages the children to communicate; does not let one child monopolize the talking; makes provision for nonverbal children to communicate through gestures, pictures, drawing.

Categories of Lessons Taught

One major problem in classes for trainable children is deciding what to teach and how to teach it. It is difficult to provide a well-balanced program with a wide variety of activities suitable for different levels of ability and/or age. Details of the lessons included under each major category will be useful *if the information is considered a guideline to possibilities, and not as what "should" be done.* Any teacher could add to this list. And any ideas used would need to be altered to fit a given classroom situation. Therefore, the following material is presented merely as an example of what one group of teachers is doing in order to suggest teaching possibilities.

Arithmetic Concepts

1. Numbers. (f: 151; EI: 407)[5]

    Concepts of amount.

        Use picture cards with numbers or groups of objects.
        Explain amounts by showing "that many" things.
        Introduce one number each day and review the concept of how many things that number involves.
        Include in any seatwork, such as coloring, whatever number of objects they have been working on that day.
        Review what they have two of, such as hands, arms, eyes, ears.
        Comment on the number of things in a story.

    Simple counting.

        Repeat counting rhymes or number songs.
        Count by rote, forwards or backwards.
        Repeat numbers after the teacher.
        Count as they perform a series of exercises.

    Relating counting to the idea of "how many."

        Count on fingers.
        Hold up the right number of fingers to show "how many."
        Set out one more object each time a number was said or sung.

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[5] "f" stands for frequency, or number of times used. "EI" is the emphasis index, or total weighted emphasis.

Tell how many fingers are on one hand or toes on a foot, how many children are absent or present, how many days a child has been absent, how many days in a week, how many children in the room, how many boys or girls.

Count the goals made in basketball.

Count cards or objects after a game to see who got the most.

Play a game in which the teacher puts out a certain number of counting blocks and the child who calls out the correct number first wins.

Count the rest of the class to see how many papers should be passed or how many lunches will be needed.

Get or put away a certain number of objects.

Pass a certain number of cookies to each child.

Turn a certain number of pages in a book.

Give to other children a specified number of bottles.

Put a certain number of flannel pieces on the flannel board.

Follow directions written by the teacher in order to find a certain number of objects in a picture.

Decide how many noses or ears to put on a face children are drawing or making in craft period.

The shape of numbers.

Tell what numbers are on cards the teacher holds up.

Say numbers as the teacher points to them.

Read numbers off a chart.

Put on or take off a numbered object from a chart rack or flannel board.

Get up and do something if child holds the number called for.

Pick out one number from a row of numbers; numbers are cut-outs or on separate cards.

Tell what new number was made when two numbers were put together on board or flannel board (e.g., 1 and 2 to make 12).

Teacher explains that numbers have names and tells what each name is.

Associating a number symbol with an amount.

Match domino cards to numbers.

Pick out the correct number to put by a matching group of blocks; may do this on seatwork paper.

Draw on seatwork the correct number of objects to illustrate a number.

Paste the correct number of pictures on a page to match a written number.

Writing numbers.

"Write" numbers in the air with a finger.

Copy numbers written on board or on their paper.

Count objects and then write in the correct number.

Write numbers as the teacher dictates.

Concept of sequence.

Tell what number comes next; may do either before or after a number.

Put cut-out numbers or number cards in the correct sequence.

Use "draw-a-dot" papers that form a picture if the correct sequence has been followed.

Addition and subtraction.

Add to or take away objects on a flannel board to match a problem set up in numbers.

Tell how many more objects are needed to make a certain number.

Tell how many objects are left when some are taken from a group.

Count two groups of objects to tell how many there are altogether.

Work out seatwork papers of addition or subtraction problems using counting blocks, peg board, or writing tallies to visualize amounts.

Concept of size.

Tell which objects are big or little.

Show with a gesture how big something is.

Indicate which number is biggest.

Miscellaneous.

Teacher uses the terms "first," "second," "third," etc., in lining the children up or in explaining turns.

Teacher explains "halfway" by comments about being halfway through the week or through some work.

Children are drilled in taking the top or bottom objects off a pile.

Teacher explains what a "pair" is, as shoes, socks, etc.

Teacher comments about page numbers, shows children how to find a correct page by checking the number.

Puzzles are used which involve numbers or quantity.

Number words are used in a word-drill lesson.

2. Clock and time. (f: 21; EI: 43)

Teacher talks about a watch a child is wearing.

Teacher comments on what time school is out, when the next activity will start.

Teacher talks about what time the children should go to bed, what time various things are done at home.

Use clock faces for practice in reading numbers.

Tell what time the hands indicate on the clock when set for different hours or half hours (play clock, alarm clock, wrist watch, pocket watch, wall clock—either teacher or children might move the hands).

Set the hands on a clock for a selected time.

Children in an older group draw in hands of clock on seatwork papers to show the times the teacher has written on the board (the whole class practiced this earlier at the board).

3. Calendar numbers. (f: 14; EI: 52)

Copy the date on seatwork papers.

Find certain numbers or dates on the calendar for holidays, birthdays, etc.

Keep individual calendars as seatwork and fill in the date each day.

Find the day of the week on a commercial calendar and put the correct number on a chart calendar the teacher has made.

Review the name of the day and date of the day with a calendar as visual aid.

4. Measurement. (f: 5; EI: 21)

Temperature.

Read numbers from indoor and/or outdoor thermometers and write down the temperature.

Check thermometer to see if it is warmer indoors or out.

Check thermometer to see if it has gone up or down.

Check and set a thermometer on a stove.

Measuring for cooking.

Use measuring cups or spoons in following a recipe.

Heights and weights.

Teacher uses scales to weigh and measure the children; writes down the results on the board; using the written numbers as a check after comparing the heights of two children standing side by side.

5. Money. (f: 9; EI: 15)

Teacher shows the children different kinds of money, including paper and silver dollars and has them look at and handle the money.

Discuss what certain pieces of money would buy.

Tell in news period what they have bought with their money.

Use play money in a play store at school.

Practice making change by determining how many of one type of coin would make another.

Teacher asks how many lunches, or cartons of milk, money brought to school would buy.

6. Ages. (f: 4; EI: 10)

Children are asked to tell how old they are; how old they will be on an approaching birthday.

Teacher comments on a child's age; relates it to numbers they are working with.

7. Telephone. (f: 5; EI: 17)

Practice writing their own numbers.

Use matching cards with a child's own telephone number.

Dial an assigned number on a phone. (One class was using a telephone set donated by the phone company in which two phones really ring when dialed.)

Write in workbooks donated by the telephone company the numbers of others in the room.

Teacher drills children on saying their own telephone numbers.

Arts and Crafts

1. Coloring. (f: 23; EI: 89)

   Teacher may review the names of the colors first, and talk with children about what colors would make a good picture.

   For physically handicapped children, coloring papers were fastened to the desk with tape so the child's attempts to manipulate the crayon wouldn't move or tear the paper.

   Using hectographed or dittoed patterns or commercial color books, children color a shape the teacher has drawn on the child's paper, trace and color a pattern, and color a picture the child himself has outlined first.

   Talk about colors on the autumn leaves, using those colors on leaf pictures.

   On a seatwork paper of different geometrical shapes, color all the same shapes the same color.

2. Drawing, painting, clay. (f: 24; EI: 78)

   Children draw whatever they want to during free play periods, when waiting for others to finish another lesson, in a regular art period ("free drawing").

   Draw a picture of something seen or experienced, including story, movie, TV.

   Add their own drawing to what was on a seatwork paper to make the picture more elaborate, or to add their own ideas.

   Draw a specific shape or picture asked for by the teacher (teacher draws a shape on the board, with the children copying it step by step, following directions).

   Paint at an easel with poster paints.

   Use water-color paints (older children).

   Paint plaster of paris figurines.

   Finger paint.

   Clay model something asked for, some shape a child had in mind, or just experiment with feel and shape.

3. Wood working (not observed directly).

   Make wooden tie racks for Father's Day.

   Make furniture for playhouse from wood boxes.

4. Pasting and cutting. (f: 21; EI: 75)

   Paste colored squares on paper in the order the teacher indicated or demonstrated.

   Cut strips of paper for later use, folding and cutting paper into needed sizes.

   Make paper chains.

   Paste features on a Jack-O-Lantern, etc.

   Glue shells on a paper to outline a design.
   Paste colored paper leaves on a paper as if they were falling.
   Paste a big picture on a reading or story chart for teacher.
   Cut pictures from magazines and paste them into scrapbooks.
   Cut pictures from wall-paper sample books and paste them to make a story or design of their own on another paper.

On a seatwork paper, cut out separate animal heads and paste them on to the correct bodies.

Cut out pictures on seatwork and paste them beside a similar picture.

5. Crafts objects. (f: 10; EI: 46)
   Lace around edge of wood or leather blocks.
   Lace up scrapbooks.
   Cut out jigsaw patterns.
   Make paper decorations for the room for holidays.
   Make gift-wrapping paper, tying up gifts.
   Glue colored stones into a commercial comb and brush gift set.
   Pour plaster of paris, etc., into molds for figurines.
   Weave paper strips to make mats.
   Trace paper feathers to make an Indian hat.
   Fold paper to make bouncy, spring-like hanging objects.
   Loop weaving.
6. Stencils and tracing. (f: 10; EI: 34)
   Trace around patterns.
   Trace over a picture at the window.
   Put a leaf or other object under a paper, rubbing a crayon over the paper to make the outline come through.
   Trace stencils with crayons or poster paints, as Jack-O-Lantern heads, Christmas stencils, etc.
   Trace around successive blocks of wood to make a train, etc.

Dramatization

1. Using gestures. (f: 55; EI: 153)
   Use gestures with songs, stories, rhymes (usually hand gestures, but sometimes foot or bodily movements, were involved).
2. Acting out a story or song. (f: 5; EI: 15)
   Act out a game such as "Did You Ever See a Lassie?" Teacher might suggest actions, or encourage children to think up their own, each one different. Sometimes the rest tried to guess what the actions were representing.
   Act out nursery rhymes, as "Little Miss Muffet," "Jack Jump over the Candle Stick," etc.
   Act out the story of a song, as others sing.
   Act out the Hallowe'en characters to fit their costumes.
3. Dramatic play (make-believe). (f: 18; EI: 54)
   Make-believe with dolls.
   Make-believe in a playhouse such as eating, cooking, etc.
   Make-believe in a play store, such as buying, selling, delivering.
   Use toy trucks, etc., for loading and dumping.
   Use stop and go signs with one child playing policeman.
   Deliver toy milk bottles, real soft-drink bottles, etc., in a dramatic play situation.

Pretend to be another person.

Pretent to read a newspaper or talk on a telephone.

Pretend child is riding a bicycle.

Pretend in a numbers game that the counting blocks are toy soldiers (usually "pretend" was initiated by teacher).

Pretend they are taking a walk while tracing a maze.

Pantomime or make-believe with actions during a song, such as singing the words with a recorded song.

4. Puppets (not observed as a lesson).

   Use commercial hand puppets in free play situations.

   Use stick puppets to help tell a story.

5. Shadow play (not observed as a lesson).

   Practice a shadow play behind a sheet so that silhouettes show through.

Health and Safety

1. Nutrition period. (f: 37; EI: 163)

   Children drink juice or milk; eat cookies or some food brought by a child.

   Children eat food cooked at school by the children.

   Teacher sends child to get the juice, etc.; matron or teacher might go themselves.

   Children help set up a central table or series of tables in advance; might include spreading a tablecloth.

   One or more children might pass the drink and food, or teacher or matron might do it, or each child might get his own.

   Quiet background music is used from phonograph or piano.

   Conversation is encouraged as children wait for the food; sometimes during the eating.

   Children say or sing grace as a group or singly.

   Teacher encourages children to eat or drink all their food.

   Each child might put his own bottle or glass on a tray, or one child might pass a tray and collect them.

   Children might handle the whole milk period, organizing it and supervising it, with one child in charge.

2. Foods. (f: 38; EI: 104)

   Name all the pictures of food on a big chart.

   Name from memory all the vegetables or fruit one can.

   Draw pictures of fruit or vegetables.

   Talk about how to cook an apple, other ways of preparing it for eating.

   Discuss the need for milk in order to grow and be strong.

   Discuss the importance of not drinking coffee until older.

   Discuss what food we get from different animals.

   Teacher drills children on what kinds of food are edible, what kinds of food people and animals eat.

   Teacher brings real vegetables to class, and children name them, handle them, talk about them; teacher cuts vegetables in half to show seeds.

Pictures of food used on seatwork for drill in likeness and difference, for coloring.

Teacher asks children what they had for breakfast or other meal.

Teacher talks about what makes a good breakfast, how we need breakfast to feel good.

3. Rest. (f: 25; EI: 65)

Children put their heads on desks for a rest.

Teacher has children sit after they have been standing for a while or sit and rest after outdoor play.

Teacher has children stand for a minute or so after a long period of sitting.

Teacher asks children what time they go to bed; talks about what time you should go to bed and the need for lots of sleep.

Extra rest is encouraged during the day for any child who doesn't feel well or has some physical disability.

4. Teeth. (f: 8; EI: 12)

Children discuss why we go to the dentist and how the dentist can take care of our teeth.

Teacher comments on the need to brush teeth after eating.

A child tells about a trip to the dentist he had.

Teacher checks to see how many children have brushed their teeth.

Occasionally a loose tooth might lead to a talk about care of teeth and the fact that when a tooth is lost another grows back in; teacher might check to see if a tooth is loose enough to pull.

5. Immunization and disease. (f: 26; EI: 28)

Discuss going to the doctor, and how it makes you feel better.

Discuss "flu" or "polio" shots; what, why, when.

If a child was out with an illness like chicken pox, a teacher might comment about it and explain what it is.

Teacher explains need for staying in bed when sick, for staying indoors with a bad cold.

Teacher might remind child to take medicine or give it to him.

Teacher isolates a child with a bad cold or cough, and has child sit by heater where it is warm.

Teacher may have to help a child having a seizure and make provision for rest afterwards.

Teacher comments about a child resting and explains that we should lie down if we don't feel well.

Teacher tells class that eating the right kinds of food will help keep you from getting sick.

Teacher gives first aid in classroom when it is needed.

6. Sanitation—cleanliness, not self-help. (f: 55; EI: 97)

Wash paint, dust, etc., off hands after an activity.

Wash hands and face if morning inspection shows the need.

Teacher compliments those children who have clean hands.

During talking time, teacher asks who had baths at home and talks about the need for baths.

Learn to use their own towels.

Wash hands before helping with lunch, eating, or touching or serving any food.

Learn not to touch food with hands when passing it.

Teacher comments about not putting in their mouths objects or food picked up from the floor.

Learn to wash a potato before and after peeling it.

Teacher tells children to keep hands or objects away from mouths, reminds children not to put fingers in mouths when handling things that are not clean.

Teacher includes in a chart of "rules" a rule about not putting fingers in mouth.

Learn to swallow if drooling or to clean off face if it has become wet from drooling.

Learn to get a tissue if sneezing or if nose is running.

Teacher helps a child wipe or blow his nose or tells or shows how.

Teacher reminds children to put their hands over their mouths when they are coughing or sneezing.

Learn to keep combs used at school washed and clean.

Use a fly swatter to get rid of flies; teacher may explain why.

7. Safety. (f: 26; EI: 44)

Go outside for practice in crossing the street.

Use games and drills with make-believe or practice stop-lights.

Discuss what would happen if traffic lights weren't obeyed.

Learn about bicycle safety.

Learn to leave things in safe places: pick up blocks off the floor, put milk bottles where they won't get stepped on, move a glass of water so that it won't fall or get spilled.

Learn how to turn the handles of the kettles on the stove facing in so the kettle won't fall and burn someone.

Learn to use a pot holder on a hot kettle.

Learn how to avoid a hot iron that was used in a craft activity.

Learn about how bees will sting and how we need to be careful around bees.

Learn which things shouldn't be eaten (how or what will make us sick).

Teacher talks about a child's sunburn, explains the danger and how to avoid it.

Teacher uses pictures of children on playground apparatus as a basis for review of the safe way to use such equipment.

Teacher comments or warns children about not rocking the rocking-boat so far that it will tip over, about being careful not to run into things with wheeled toys, to pull instead of push.

Teacher explains that tying ropes around necks is not safe, shows which pieces of furniture it would be safe to tie ropes to.

Teacher explains that children shouldn't touch an open pocket knife that the teacher is using on a craft project.

Teacher warns children to be careful in throwing a ball so that a child's glasses won't get hit.

Teacher reads a story or shows a picture to help with the idea of staying off the streets.

8. **Posture.** (f: 43; EI: 52)

   Practice walking with beanbags on heads.

   Look in a mirror in order to see the correct way to stand or to compare one's posture with someone standing beside him.

   Learn how to hold heads, shoulders, chins, chests, in order to stand straight.

   Learn how to sit up straight, where to put feet when sitting at a desk.

   Teacher reminds children to sit or stand straight.

   Teacher tells a child to "walk like a princess" to keep from stomping along.

9. Getting a drink. (f: 14; EI: 24)

   Teacher sends the children for a drink before they start another activity or after coming in from outdoor play or recess.

   Teacher encourages children to get drink of water whenever they want it.

   Teacher may ask a child to get a drink "so he will feel better."

Language Development

1. Speech drills. (f: 67; EI: 129)

   Teacher has child repeat a word or sound to practice it.

   Teacher shows a child how to use the mouth or tongue to pronounce a word or sound.

   Close off their noses with fingers to see what happens to the "m" sound.

   Hold their throats to feel a sound as it is spoken.

   Learn to relax like a rag doll.

   Learn to reproduce animal or insect sounds, like bees.

   Imitate the "mmm" sound of a top.

   Teacher shows pictures and asks what sound the animal in the picture makes, or the motorboat makes, etc.

   Use a clicking sound as they play horse or pretend to ride a baby on a swinging foot.

   Teacher points out how different children's names begin with a certain sound.

   Teacher uses a reading lesson with alphabet letters as drill in making that sound.

   Teacher asks for words beginning with a certain sound.

   Draw a circle around a picture, the name of which begins with a sound given by the teacher.

   Teacher encourages a child to speak out, talk louder, speak more slowly.

   Blow bubbles or blow into their hands to feel the "wh" sound.

   Teacher compliments a child on speaking or talking slowly.

   Teacher corrects a child's use of English.

   Teacher explains how a word has more than one syllable and helps a child say it correctly.

Tell parts of a story or answer questions in a complete sentence.
Repeat sentences after the teacher.
Repeat nursery rhymes, as teacher helps with pronunciation.
Talk over a toy telephone for practice in talking clearly.
Name things in a picture, etc.

2. Talking and sharing time. (f: 90; EI: 311)

Talking time.
  Tell what they had for breakfast or lunch.
  Tell what they did to help at home.
  Talk about what they are going to do when they get home.
  Tell what they saw on television or on the way to school.
  Tell what happened at a class picnic.
  Tell what they have seen at the circus or are going to see.
  Talk about what they want for Christmas or what each child is thankful for at Thanksgiving.
  Tell what they did at Sunday school.
  Give their own names and addresses.
  Name other children in the room.
  Tell the names of the members of their families.
  Ask questions of the other children who give news.
  Describe to the rest of the class how to do something.
  Tell what a song is about or talk about the kind of music they like, who their favorite performers are.
  Tell about pictures they had drawn or that the teacher holds up.
  Name flannel board objects and talk about them.
  Teacher encourages conversation during a free period (usually reminding children to talk quietly), during lessons such as milk period, during a break when watching television. Teacher asks questions to encourage talking.
  Teacher introduces a lesson like art by leading a group discussion on background and by motivating ideas.
  Teacher gets the children to talk about how their own personal interests relate to a story the teacher is going to read.

Sharing time.
  Show something brought to class, explaining about it.
  Share food brought to class.
  Show a picture brought to share.

3. Writing. (f: 56; EI: 176)

Write on papers at their desks, on the chalk board, in notebooks, or in a sample telephone book that the telephone company has prepared for school use.

Practice making lines or circles in swinging, rhythmic motions; might keep time to a song.

Practice letter forms and pencil control by copying words from a book or paper or by tracing over words the teacher has written for them.

Write their own names, either on seatwork or just repeatedly for practice.

Write numbers, on seatwork or for practice.

Write alphabet letters, words, or sentences the teacher dictates or spells for them.

Write own addresses.

Label pictures they have drawn or cut out and pasted.

Make signs as words to study or as signs for the room.

Voluntarily practice writing during free activity period.

4. Reading. (f: 69; EI: 223)

Find own name card from among all the others.

Hold up hand if own name is recognized as teacher writes the names on the board.

Indicate in some way when own name is recognized on a card the teacher holds up.

Get or hold up own name card as teacher and class sing that name in the morning song.

Read names of all the children as teacher holds up each card, pointing to the names on a chart or on the board and reading them all off.

Play a game where a child passes out the name cards to all the children.

Find own names on envelopes to put away their work.

Find own names on towels, books, Christmas packages.

Find own name; put it on the work chart by his job for that day.

Teacher writes child's name on his paper and asks him to read it.

Read the names of all the children to pass out their crayon boxes, books, etc.

Match name cards.

Match own name card to name over their towels.

Review reading of schedule of what they were to do that day.

Review reading of written rules that the class has helped set up and teacher has written on a chart.

Read directions on seatwork papers with teacher's help.

Read what they have written on their own seatwork.

Read from recipe books the teacher has developed for them.

Read from a post card that is received in the mail.

Read the date from a calendar.

Find the word that goes with a flannel board picture; match any word to a picture.

Teacher gives beginning sounds as clues in word recognition.

Read words in unison with the teacher.

Read from the big charts that come with basic series.

Read words underneath a picture on a chart.

Read a label on an object.

Read pictures or words in a readiness book.

Read the words in a simple book (older children).

Read pictures and/or stories in "My Weekly Reader" or similar publication.

Go through a series of word cards in a game to see how many they know.

Review the words from common signs on word cards ("Exit," "Keep Off the Grass," "Wet Paint," etc.).

Learn to read alphabet letters on drill cards, chalk board, or in their names.

Find an alphabet letter asked for and put it on the flannel board; when all have had a turn the letters spell a word.

Find a certain letter on an alphabet chart.

Tell which children's initials were marked on a target they have been shooting at.

5. Story period. (f: 35; EI: 129)

Teacher uses flannel board characters to help tell a story.

Teacher tells a story with gestures (no book).

Teacher describes a child and makes up a story about him.

Teacher tells the story of a song.

Children tell any story they wish.

Child repeats a story in his own words after hearing it.

Teacher asks children what comes next in a story, or asks questions about what has happened.

Each child tells a story about a picture he was given.

Children tell stories as they manipulate cut-outs of farm and story characters.

Teacher reads story from "My Weekly Reader" or similar publication.

Teacher reads Bible story, Sunday school story.

Teacher reads a poem to the children.

Teacher reads letters the children have received.

Children listen to stories on records, may look at accompanying picture book.

Teacher uses filmstrip stories, has children tell the story.

Children watch television or movie stories.

6. Roll call (included under Language Development because it so often included some type of language activity). (f: 32; EI: 148)

Answer "Here."

Give first and last name.

Get or point to own name card; may point to own name card in several different places in room.

Give news.

Introduce themselves.

Give own addresses.

Tell who was present or absent, how many were present.

Class sings "Jim is here today" as child stands.

7. Listening skills. (f: 38; EI: 46)

How to listen.

- Teacher tells children to listen carefully.
- Teacher reminds children to look as well as listen so they can remember what is happening.
- Teacher reminds children to use their ears, but not their mouths, in listening.

Teacher tells children to sit up straight and sit quietly so they can listen.

Teacher tells children to put their work away so they can listen better.

Teacher says they will wait to start until everybody is listening.

Motivating listening.

Teacher tells children to listen well so they can answer questions later.

Teacher tells children to watch the leader so they will know what he tells them to do.

Teacher has other children listen as one child reads something to see if they could hear or if it was read correctly.

Teacher asks child to be quiet and listen when another child is talking so people will listen to him when it is his turn.

8. Unison speaking. (f: 70; EI: 208)

Say flag salute together.

Join in nursery rhymes, finger play rhymes, counting rhymes, or speech rhymes.

Say refrains in story such as the "Gingerbread Boy."

Say the days of the week together.

Say the words of a song.

Count or say numbers in unison.

Say or read words in unison; read in unison from an experience chart.

Say a prayer together or grace before eating.

Say Bible verses together.

(Children seem to like this unison speaking because it was occasionally used spontaneously in a sing-song way while waiting for some other activity to start or finish.)

9. Spelling. (f: 14; EI: 26)

Teacher explains how to spell a word teacher or child is writing.

Teacher asks child to spell his name or some other word.

Use the "See and Spell" game.

Use a printing set to make the words.

10. Reading pictures. (f: 62; EI: 174)

Name objects in pictures, telling what is happening.

Say the Bible verse that goes with a picture.

Tell about a picture brought to school to share.

Tell which nursery rhyme goes with a picture.

Answer questions about the pictures in a story book, magazine, scrapbook.

Tell about a series of pictures that were cut out and mounted.

Tell about the pictures on Christmas cards.

Look at books and magazines in free time.

Tell about the picture in a song book.

Tell what picture was found in a pattern.

Tell about a filmstrip picture.

Tell about the pictures on puzzles, on a matching card game, on seatwork papers.

Identify children who were in a photograph taken at school.

Find details on a circus or number or story chart.

Tell about the pictures in paper as "My Weekly Reader."

Tell the picture story in the "Big Book" or reading chart of a basic series.

Name the pictures in a readiness book, telling what was happening; answer questions about the pictures.

Underline the right picture in a series as the teacher names it.

Find the picture that would answer a question the teacher asks, e.g., "Which one do you ride in?" "Which one do we eat?"

In a speech drill, name the picture or tell what sound the object in the picture makes.

Draw something seen on a picture.

Teacher uses pictures as visual aids in any type of lesson.

Teacher uses a picture of a child crying as the basis for a discussion of what makes us cry, what we can do when someone cries, etc.

Ask questions about a picture another child is showing.

Tell the story in a picture they had made themselves.

Music

1. Singing. (f: 110; EI: 393)

The lesson.

- Teacher accompanies songs on a piano.
- Children sing with records.
- Two classes get together for a singing period.
- Children go to assemblies of the whole school and sing there.
- Teacher or children choose the songs.
- One child acts as leader, keeping time to the song.
- One or two children run the song period, calling on others for suggestions, leading the singing.
- Children hum a song as well as sing it.
- One child sings a solo.

Types of songs.

- Religious songs, Sunday school songs, spirituals.
- Songs from children's song books.
- Action songs, to which the children make movements.
- Songs about holidays.
- Popular songs: commercials, children's shows, etc.
- Finger play songs.
- Number songs.
- Nursery rhyme songs.

Use of songs.

- Sing while working.
- Sing to each child during roll call; sing answer.

Sing about the weather during a lesson on that day's weather.
Play singing games.
Sing as they dance during a rhythm period.
Sing as they do exercises.
Sing "Happy Birthday" to someone.
Sing a song that goes with a picture in another lesson (as "Little Red Caboose").
Sing with a phonograph story record.
Join in a song as they watch television.
Sing a song that goes with a filmstrip.
Sing a rhythmic song during writing period.
Sing grace before a meal.
Practice group and solo singing for a show or party.

2. Rhythms. (f: 18; EI: 74)
March during a flag salute period or in rhythm period.
Skip to music.
Do imitative rhythms such as imitating animals, skating, galloping, etc.
Do folk dancing and singing games such as the "Virginia Reel."
Dance to a song (as "Shoemaker's Song").
Do a polka dance with partners.
Practice ballroom dancing, simple step-slide, waltz. (In one class high-school girls came in and taught the children to do some "bop" dancing.)
Play a dancing game, where the children have to stop when the music does.

3. Clapping and keeping time. (f: 17; EI: 43)
Clap as they march to music, as they sing a song, as they listen to a record.
Sing a clapping song.
Tip fingers against each other in time to music.
Tap their hands on knees in time to music.
Stamp their feet to music.
Using a stick, take turns beating the time as the rest sing.

4. Rhythm instruments. (f: 3; EI: 15)
Use rhythm sticks to beat time.
Use the various instruments with simple tunes.
Use the instruments as they march.
Learn to use the instruments fast or slow with different kinds of music.
Learn to come in at the right place and to stop when the music stops.

5. Appreciation (listening). (f: 20; EI: 69)
Listen quietly to records.
Respond to records with gestures, etc.
Bring favorite records to school for others to hear.
Learn to put the records on the record player; run own listening period, or one child listening to records in free time.

Listen to quiet background music during period. Teacher might use "mood music" to quiet the children.

Listen to the piano, naming the song played, what it made them feel like, or what it sounded like, etc.

Listen to the school band practicing outside.

Occupational Education

1. Planning the day's work. (f: 10; EI: 48)

   Using a chart on chalk board or wall or flannel board; the teacher could put children's names with a sketch which shows the job they have volunteered for that day.

   The teacher writes children's names on paper with the name of their jobs and posts this paper so children can refer to it later.

   Teacher chooses children for certain jobs; may count off.

   In one class jobs assigned during cooking were written up in a planning and recipe book the children used.

2. Following printed directions. (f: 7; EI: 19)

   Teacher shows children the word "top" on an object so they know which is the right side.

   Read and follow directions on seatwork papers.

   Learn how to follow pictured directions for block building.

   Use recipes.

3. Learning to use tools (any implements used at home or school). (f: 9; EI: 23)

   Learn to use a stapler, paper punch.

   Learn to use paint brushes.

   Use needles; learn to thread them.

   Practice with rolling pin and cookie cutter.

   Learn to use coping saws.

   Use a pocket knife to trim ends in lacing.

4. Work habits. (f: 157; EI: 266)

   How to work.

   - Teacher tells children to keep busy, get busy, find something to do.
   - Teacher reminds children about a job to do.
   - Teacher reminds children to work quietly, slow down, work more slowly, take their time, etc.
   - Teacher compliments a child for having worked hard.
   - Teacher encourages a child to keep at his work.
   - Learn not to "skip around" on what is being done, to perform each step as he comes to it (usually on seatwork).
   - Teacher tells a child not to stop until his work is finished, to finish what he has begun.
   - Teacher checks to see if a child has really completed his work when he thinks he is finished.
   - Learn to compare one's work with a model, to see if it really is finished and looks the same.

Teacher tells a child just to take one book at a time.

Teacher shows children how to keep their work together so it won't get in another person's way.

Teacher explains how to open and take care of crayon boxes, where to put crayons so they won't get knocked off desks or roll off.

Teacher shows children how to arrange materials so they won't get all mixed up together.

Teacher has children move apart so they won't get in each other's way.

Teacher shows how to roll up sleeves before starting to paint.

Teacher tells a child the best place to use the big blocks is on the floor, not on the tables.

Teacher explains that a child will get dirty if he crawls on the floor, that he should stoop to pick up things.

Taking care of materials.

Teacher tells a child he has had enough of something, not to take any more.

Teacher tells a child to be careful with materials, take care of them, use them right, not drop them, etc.

Teacher has children use both sides of the paper so it will last longer.

Teacher explains they should use something all up before asking for more.

Teacher shows how to put brushes in water jar so brushes won't harden from the poster paint.

Teacher has children save their scraps so they can be reused (clay or paper).

Children are cautioned to watch food that is cooking so that it won't burn; to close the refrigerator door so that it will remain cold.

Clean-up.

Teacher makes sure the children put their materials away.

Teacher emphasizes the importance of returning things that they took home overnight.

Teacher explains how to put work away so that it will be convenient for later use.

Children put finished work up on bulletin board.

Learn to sweep or pick up things from floor.

Brush crumbs off clothes or chair into the wastebasket.

Teacher reminds children to put lid back on paste jar.

Teacher has child pass the wastebasket for others to use.

Wash brushes; wash paste from utensils; clean off a table; wipe up something that was spilled.

Erase a board; clear off desks

Put chairs under the table when finished.

Teacher shows children where to put their fingerpaints or easel paintings, etc., to dry.

Teacher comments on the reason for clean-up and the need for it: "Have to clean-up when mess-up; can't find things next time if they are not put away where they belong."

Neatness.

Teacher has a child erase some work and do it over more neatly and carefully, or throw something away and start over again.

Teacher or child inspects children, their work, grooming boxes, etc., to see if all is neat and clean.

5. Kinds of jobs. (f: 4; EI: 10)

Teacher talks with children about the kinds of jobs that the children could do to help at home.

Discuss the kinds of jobs that need to be done in the classroom.

Discuss what a storekeeper's job is before playing store.

Talk about the kinds of jobs after a visit to a store, etc.

Learn about the school janitor's job by working with him during the day.

Practical Arts

1. Cooking. (f: 2; EI: 6)

Cook a complete meal and eat it at school.
Describe how they cook hot dogs at the class picnic.
Talk about helping to cook at home.
Talk about other cooking experiences at school.

2. Sewing. (f: 2; EI: 6)

Sewing buttons in patterns on cards.
Use sewing cards to follow lines, and outline a picture.

3. Dishwashing. (f: 5; EI: 7)

Help the matron or cook wash the dishes after a food period.
Wash dishes after lunch; learn to scrape, wash, dry.
Wash dishes after a cooking lesson.

4. Cleaning. (f: 2; EI: 6)

Sweep the floor after an activity period.
Dust the furniture as part of daily chores in the room.
Learn to use a broom and dustpan to clean the floor.

5. Gardening (no real lesson observed).

Discuss seeds that had been planted in pots at school.
Discuss how to help with the gardening at home.

6. Setting the table. (f: 7; EI: 27)

Help set the tables for juice period.
Help set tables for lunch.
Set a table for breakfast they have cooked.
Practice table setting with doll dishes or real dishes.
Compare a set table with a model.
Teacher inspects and corrects a table setting.

7. Chores around the room. (f: 12; EI: 42)

For food period get the juice, etc.; wipe off tables; set tables; clear tables.

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Get out cots, and set them up.
Get water, and water plants.
Feed fish, turtles, changing their water.
Dust furniture; inspect coat room to see that coats are hung neatly.

8. Preparing foods. (f: 3; EI: 13)
Prepare oranges.
Fix a breakfast.
Peel and wash potatoes.
Open and pour a can of juice.
Spread butter, peanut butter on crackers.

9. Encouraging the children to help at home. (f: 10; EI: 26)
Teacher asks children what they did at home, encourages them to help.
Teacher asks how many help their mothers fix vegetables.
Teacher suggests children help with the garden at home.
Teacher explains that when they learn to cross the street safely they could help at home by going to the store, running errands.
Teacher has children tell all the possible ways of helping at home.

10. Serving and clearing the table. (f: 14; EI: 24)
Pass milk or juice.
Pass food brought to share.
Serve themselves with juice.
Clear the glasses, take glasses off on a tray.
Clear table after lunch, etc.

Motor Development

1. Games. (f: 25; EI: 99)
Ring toss game.
Roll a ball to knock down blocks.
Beanbag toss and catch game; toss a beanbag into a box.
Play "Who Has the Thimble," "Jack Jump over the Candlestick," "Follow the Leader," "Simon Says."
Blindfold games, where one child has to guess who touched him, or who took the beanbag, etc.
Drop the hanky; may sing "A Tisket, a Tasket" with this.
Singing games such as "Farmer in the Dell," "Did You Ever See a Lassie?"
Chant "Teddy Bear, Teddy Bear" as they go through the actions without a jump rope.
Musical chairs.
Teacher makes lessons into a game by keeping score, etc.
Rhythmic activities may be considered a game.
Use an auditorium or gym for running and ball games.
Play games, run, etc., at recess outside.

2. Skills. (f: 22; EI: 72)

   Throw and catch beanbags and balls; toss a ball at a target or hoop; bounce a ball; roll or bowl a ball.
   Use a bubble stick or pipe.
   Aim and shoot target guns.
   Pump a mechanical top to spin it.
   Swing a baseball bat.
   Ride a bicycle or wagon.
   Use a slide and climb bars in the classroom.
   Use a "rocking boat," a commercial toy that becomes stairs when turned over.
   Practice riding on a bouncing hobby horse.
   Learn to pick up and hold a chair, to carry it.
   Learn to open and set up a folding table, cot, movie screen.
   Jump for height or distance.
   Practice lifting their knees and feet high when walking; skate or slide feet across the floor.
   Learn the correct way to walk, run (on toes, leaning forward).

3. Manipulative skills (fine coordination; might come in any activity during the day). (f: 93; EI: 255)

   Arts and crafts.
      Glue or paste.
      Model clay.
      Do loop weaving, other weaving.
      Lace the edges of objects or scrapbooks.
      Use stencils for tracing patterns or objects.
      Fold paper.

   Manipulative toys.
      Pegboards, puzzles, nut and bolt sets.
      Beads to string.
      Play with blocks, large cardboard blocks, Lincoln Logs, Tinker Toys.
      Use a marbles board; place marbles in patterns.
      Hook together parts of a train; manipulate wheeled toys such as trains, cars, trucks, etc.
      Fit color cone sections over the center peg.
      Use the sand box.

   Games.
      Ball or beanbag games; ring toss.
      Play with a rope.
      Shoot a toy gun.
      Spin the arrow in a marker.

   Equipment.
      Manipulate scissors and paper.
      Learn to put on a record and place the needle.
      Point with a long stick to words, pictures, etc.
      Use paper punch, potato peeler, cookie cutter.

Learn to shake and manipulate rhythm instruments.
Use a needle, pencil, chalk.
Use a printing set.
Sort objects; stack cards.
Wring out a washcloth.
Put pieces on a flannel board.
Put objects in envelopes, closing the flap.
Fold napkins, blankets, towels, etc.
Tie knots in thread, tie shoelaces, lace shoes.
Polish shoes.
Fit plastic stand on bottom of cut-out story figures.
Pry the lid off a can.
Use sandpaper correctly.

4. Finger play. (f: 11; EI: 41)
   Say finger play rhymes.
   Sing finger play songs.
   Use finger play with records.

5. Free play. (f: 40; EI: 165)
   Teacher suggests something for child to do.
   Teacher has each child tell what he wants to do before starting.
   Part of the class has free play while teacher works with a subgroup.
   Those who finish a lesson first have free play while waiting for the rest.
   Use wheeled toys, bicycle and wagon, in room during free play period.
   Use playhouse, blocks, other game activities around the room.
   Use small manipulative toys at seats.

6. Exercises. (f: 17; EI: 52)
   Teacher or child leads in a series of exercises.
   Do exercises to a song or verse.
   Go through the actions of a school yell.
   Stretch or do exercises after a sitting period.
   Teacher sends one child to next room to run and jump and work off some of his energy.
   Child with a crippled hand was encouraged to exercise it in different activities.

7. Outside play (not observed in detail, since there was not an equal opportunity to observe in all cases). (f: 18; EI: 88)
   Teacher sends children outside to play with matron or by themselves.
   Teacher goes outside with children, participates in play.
   Part of class goes out while the rest work on something special in the room.
   Take partners and line up when ready to go out.
   Get equipment such as balls, beanbags, bicycles, wagons, scooters, to take out.
   Teacher and matron help with getting coats on and off.

Socialization

1. Social techniques. (f: 89; EI: 135)

   Shake hands with each other and with visitors.

   Learn to say, "How do you do," and introduce strangers.

   Teacher explains to the boys that gentlemen don't wear hats in the house, that boys should let girls go first, that a boy should be gentlemanly (such as carry a chair for her).

   Learn how to take partners for dancing.

   Learn to take a bow when applauded for a performance.

   Teacher explains that we don't kiss people, we greet them by shaking hands and saying hello.

   Discuss why we need to be good citizens and not disturb people when we go down the halls.

   General discussions about what is the nice or polite thing to do.

   Learn how to line up, wait in line.

   Learn how to move over to make room for another person to sit.

   Learn to be quiet so the children in another part of the room can hear a lesson.

   Learn not to sit in front of someone so they can't see, not to walk in front of people, or pass something directly in front of them.

   Learn not to crowd in front in a line or in a group.

   Say you are sorry when you did something you shouldn't have done.

   Teacher explains that we don't laugh when someone gets hurt.

   Learn to wait until everyone is ready before beginning an activity. Teacher explains that sometimes we have to wait and watch while somebody else gets something done or while we are waiting our turn.

   Learn not to put feet up on chairs.

   Learn to say "Excuse me," "Please," "You're welcome," "Thank you," or "No, thank you," or "May I be excused."

   Answer "Yes, ma'am," "No, ma'am."

   Ask for something politely, not just saying "hey" to someone.

   Learn manners for the telephone.

   Table manners.

      Sit before being served.

      Learn how to ask for food to be passed.

      Wait to eat until host or leader is seated, all are seated and ready to eat.

      Wait for "seconds" until everyone is finished.

      Wait to leave the table until everyone is finished.

      Teacher explains that it is not polite to rush people with their food, that they should be given a chance to finish.

2. Respect for the property of others. (f: 12; EI: 12)

   Teacher explains that something belongs to someone else and they should leave it alone.

   Teacher uses the story of "The Three Bears" to illustrate the idea of not going into other people's houses unless asked.

   Teacher explains that children should sit in their own chairs, not somebody else's.

Teacher might just ask a child if something he is using belongs to him, in a warning way.

Teacher explains you don't make marks on someone else's paper unless you want them to make marks on yours.

3. Sharing. (f: 18; EI: 20)

Share equipment or materials such as paint brush or jar, pegs for the pegboard, papers, or crayons.

Bring food, etc., to share with the class.

Teacher mentions how she likes to share with them, or that they will share something.

Share things like swing or wagon at outside play.

Share equipment such as the rocking horse or wagon (two or more using it at once).

Let someone else use something you are not using right now.

Teacher asks a child to borrow something he needs from another child.

4. Taking turns. (f: 78; EI: 82)

Teacher comments about taking turns in some activity or game.

Children or teacher check to see if everyone has had a turn.

In a game, teacher reminds a child to choose someone who hasn't had a turn.

Teacher compliments children on how well they are waiting for their turns.

Teacher tells child it is his turn, someone else's turn, that he's already had his turn, to wait his turn.

Teacher reminds child to listen for his name so he will know when it is his turn.

Teacher asks who wants a turn.

Teacher tells children "One at a time," or "You're first, you're next," etc.

Teacher explains to the children that in a fire drill they have to wait their turn to go through the outside door.

Teacher reminds children to wait until someone is through before taking a turn, or cautions a child that he is through and to let someone else have a turn.

5. Getting along with people. (f: 35; EI: 43)

Exhortation by the teacher: Treat people well, be kind to people, love people, be friendly, don't hit, don't kick, don't shove, don't fight at school, don't put hands on others or touch others, don't quarrel, don't tease.

Teacher has boys shake hands after a fight.

Teacher reminds children about "rule" on chart about not fighting.

Teacher tells child to give back something he has taken from somebody else.

Teacher asks child to let another child play with him.

Teacher explains that when we get hungry we sometimes get upset and that if we know this maybe we can keep from losing our temper.

6. **Helping others.** (f: 65; EI: 73)
   - Helping other children.
     - Help another child with school work.
     - Help another by prompting him.
     - Show another how to do something (as toeing a line, throwing a ball).
     - Inspect the others to see if faces are clean.
     - Go as a "buddy" with a less capable child who needs to wash up.
     - Help another child sing a song.
     - Help another with his job for the day.
     - Help prepare food for the class.
     - Help calm a hyperactive child by working or playing with him.
     - Hang up a coat for a child.
     - Help interpret what another child is trying to say.
     - Tie shoes for another.
     - Put up the crutches for a lame boy.
     - Fix the desk top for another child.
     - Unscrew a jar top for another.
     - Carry a chair for a child.
     - Reach something down from the top of the cupboard for a shorter child.
     - Teacher comments that a boy should help his sister at home.
     - Teacher reminds someone to let someone else help him.
   - Helping teacher.
     - Hold up a picture during a lesson.
     - Pick up something teacher dropped.
     - Button up the back of the teacher's apron.
     - Help move furniture.
     - Help clean-up.
     - Help teacher remember to do something later.
     - Fix something another child had left undone.
     - Help put a chart up on the wall.
     - Help pull the curtains.
     - Help the school nurse or janitor.
   - Miscellaneous.
     - Stand up front and keep time during singing.
     - Pass food, napkins, etc., at nutrition period.
     - Be hostess or leader for the day.
     - Go on an errand with another child.

Science Concepts

1. **Pets.** (f: 28; EI: 58)
   - Orientation.
     - Pets are introduced through songs, poems, pictures, stories in a book, filmstrips, stories in readings as in "My Weekly Reader," through use of story or farm animal cut-outs, through a large chart with pictures.

Teacher might use pets to motivate talking-time or any lesson. (Teacher used as a basis for discussion a puppy a boy had brought to school.)

Discuss usefulness of animals, how they help us.

Care of pets.

Teacher talks about need of being kind to animals.

Discuss how to take care of pets, what they need: food, water, a place to stay, to be kept clean.

Discuss what pets need to eat.

Feed and take care of fish, turtles, birds, rabbits at school.

2. Growth of plants, seeds, leaves, etc. (f: 14; EI: 30)

Orientation.

Discuss the trees in bloom seen on the way to school.

Talk about leaves falling; look at colored leaves the teacher brings in; sing songs about fall leaves.

Teacher reviews with the children the names of flowers and brings in the flowers for the children to see and practice naming.

Teacher comments on flowers the children bring to school.

Care of plants.

Teacher reads a story about plants growing.

Talk about the kinds of vegetables that grow in a garden with pictures for discussion; tell about what grows in their gardens at home.

Talk about what flowers need in order to grow, how to take care of plants.

Water plants in the room.

Look at seeds they have planted to see how they are sprouting; talk about what seeds need to keep them growing.

3. Nature study. (f: 17; EI: 43)

Talk about farmyard animals and what they eat.

Teacher uses a chart with animal pictures and asks what their names are, perhaps reviews the sounds they make and explains something about how the animals live and what they do.

Talk about zoo animals; read a story about zoo animals.

Color or cut out animals as seatwork.

Teacher reads a story about wild animals or birds.

Sing about different birds; talk about the birds in their songs.

Learn to recognize birds from their pictures.

Teacher comments about birds in pictures: what they do, what they eat, how they live.

Go to the window and watch the birds outside.

Talk about insects, caterpillars, animals, birds seen at the class picnic.

Teacher reads a story about bees or butterflies, talks about their habits, how they develop.

Teacher tells story about how the pollywog becomes a frog.

Teacher reads a story about the stars, explains how the North Star is used for direction.

4. Magnets and other physical forces (no direct observation).

Magnets are in the room for the children to play with.

Electricity and steam are mentioned during safety lessons.

5. Weather. (f: 38; EI: 65)

General orientation.

Teacher comments about the weather—how hot or cold it is, the color of the sunrise, the frost-covered ground in the morning.

Sing songs about weather.

Teacher relates the weather to a story she is reading.

Teacher shows a picture of a rainbow; talks about rain and sun and why we need them.

Teacher relates thermometer reading to the weather that day.

Help alter a weather calendar with symbol for that day's weather, sun, cloud, etc.

Teacher talks about the things you can do when the weather is good or bad, about the need to wear different kinds of clothing in different weather.

Discuss when to use an umbrella.

Self-Help

1. Washing. (f: 36; EI: 106)

Sing a song about washing hands.

Teacher or child inspects hands to see if they have been washed clean, send children who need it to wash. (Children may wash alone or with supervision.)

Teacher shows how to put plug in basin, turn on the water, wash, rinse, wring out washcloth, how to use washcloth or towel, how to get hands dry, etc.

2. Grooming. (f: 35; EI: 77)

Teacher encourages children to come to school clean, describes how they should take baths at home, shine shoes.

Teacher comments on how nice or neat a child looks.

Teacher or child inspects children to see if they are clean, nails clean, teeth brushed, hair combed, etc.

Good-grooming boxes were used, in which a comb, nail file, facial tissue, hand lotion, etc., were kept. (This was usually a cigar box covered with paper.)

Learn how to use hand lotion, how to put on nail polish.

Learn to comb hair, to arrange hair so it won't fall in eyes.

Learn how to shine shoes, how to use a shoe horn, to clean mud off shoes, keep laces tied.

Teacher asks child to go look in the mirror to see where his face needs cleaning.

3. Toileting. (f: 45; EI: 109)

Teacher reminds child to go to lavatory, takes child to lavatory, supervises child in lavatory, gives instruction.

Teacher reminds child not to take his pants down until he is in the lavatory.

Teacher explains to child how to use and flush the toilet.

4. Dressing. (f: 47; EI: 79)

   (In one case, teacher brought clean clothes to school for one child, and every morning the child dressed in the clean clothes, changing back before going home.)

   Learn to work a zipper, button up painting smock, fasten belt, tuck in a shirt and keep it tucked in.

   Put on coats and sweaters before going out, take them off when coming in. Teacher or matron might help or just give explanation or directions.

   Hang up coats and sweaters at school.

   Teacher helps child put on socks and shoes, tie shoelaces.

   Learn to tie shoes, practice with real shoes, wooden shoe. Teacher might guide child's hand through the movements or just give directions.

5. Eating. (f: 23; EI: 39)

   Learn manners at the table.

   Learn how to ask for what they want.

   Learn how to spread peanut butter with a knife.

   Learn to eat with lips closed.

   Learn to drink without spilling or gulping.

   Learn to take small bites or handfuls.

   Teacher might instruct a child who was physically handicapped how to hold a cup or utensil; self-feeding.

   Learn to wipe hands and mouths after eating and drinking.

   Learn to drink with a straw; learn to drink from a glass.

6. Brushing teeth. (f: 2; EI: 10)

   Learn how to put toothpaste on, how to wet the brush, how to brush in and up-and-down motion, how to rinse the mouth.

   Practice brushing teeth after meals under supervision by teacher or matron.

Social Studies

1. Home and community. (f: 37; EI: 76)

   Teacher talks about what a good citizen should do. (In one class where the father of one of the boys was running for an office, the children were introduced to the concept of voting.)

   Use dramatic play to learn how to cross streets; take real walks to visit stores and other community facilities.

   Learn the kinds of stores, what is in a pet store, grocery store, drug store, etc.

   Talk about local parks and other community recreational facilities.

   Visit newspaper offices; talk about a newspaper: what it is, what is in it.

   Talk about a ball game, PTA program, or other type of school entertainment or activity.

Talk about where children live; name people in their families; tell what work father does; tell about family activities over the week end, as fishing trips, etc.

Learn what a policeman does, how he helps us.

Talk about the milkman; play milkman, and deliver toy bottles.

Teacher can talk about the post office and what it is for; shows children how they can play post office; children mail letters.

Play store, buying "pretend" food. (Children had brought empty cans and boxes.)

2. Holidays, flag (cultural factors that might vary from country to country). (f: 43; EI: 155)

Flag.

Teacher or child leads the flag salute.

Children say a simplified pledge, "I love our flag and our country," as they salute.

Teacher asks one or two children to say the pledge by themselves.

One child holds the flag as the class salutes.

Sing "America" or some other patriotic song; march with the flag after the salute.

Answer questions about the flag—what color it is, what it stands for, what is on it, etc.

Holidays.

Have a party at school to celebrate a holiday.

Draw pictures about holidays.

Sing holiday songs.

Learn what a holiday is, the story about it.

Talk about Santa Claus, what he might bring, what they want for Christmas.

Teacher uses holiday cut-outs, such as stars and bells at Christmas, as visual aids or to motivate other lessons.

Teacher points out holiday on the calendar.

Make or wrap presents.

Tell what they will do Hallowe'en night.

Teacher explains about a Jack-O-Lantern, why they have it, how it is made, etc.

Tell what they are going to eat at Thanksgiving, see what they have to be thankful for.

Talk about a card they are going to make for Mother's Day with their picture on it.

3. Transportation (no specific lesson observed).

Use pictures or charts of vehicles.

Use toy trucks, trains, planes, etc., talk about their use.

4. Chapel, grace, etc. (f: 54; EI: 248)

Teacher reads a story from the Bible or an adapted story.

Talk about going to Sunday school or vacation Bible school.

Teacher reads a story from a Sunday school book or card.

Teacher asks children what they saw on the way to school that Jesus made.

Say Bible verses, psalms.

Teacher interprets the meaning of the Bible verses, songs, or Psalms, ties them in with what the children should do (i.e., ethical behavior, as "do unto others . . .").

Teacher holds up picture cards and children give the appropriate Bible verse.

Teacher and children say a morning prayer; teacher reads a prayer; children sing a prayer.

Sing Sunday school songs, spirituals, and the holy songs for Christmas, etc.

Teacher explains the meaning of Christmas, tells about Baby Jesus and His birthday, tells the Christmas story.

Sing or say grace before meals.

Teacher shows a picture of a family saying grace, talks about the practice of thanking God for the food.

5. Month, day, week: names and concepts. (f: 25; EI: 73)

   Teacher asks what time of year it is, talks about the nature signs of that particular season.

   Teacher tears a page off the calendar as a new month begins, reviews with the children the names of the old and new months.

   Teacher has children say names of days of week, names of months.

   Teacher asks children for names of today, tomorrow, yesterday.

   Sing a song about the days of the week.

   Teacher asks how many days are in a week, which days they come to school, what day a holiday comes on, what they do on Saturday or Sunday when they don't come to school.

   Review on their own seatwork calendars the day and the month and the year; write them down; may copy day, month, year off the board.

6. Conservation (no direct lessons observed).

   Teacher talks about need for not walking on lawns, not picking flowers in parks, the need for taking care of growing things, not harming wild animals, as part of another lesson.

7. Learn own names and addresses. (f: 7; EI: 29)

   Tell own names, where they live, addresses.

   Learn to write their own names and addresses.

8. Fire drills (should be part of safety, except that they are city-wide). (f: 2; EI: 10)

   Children participate in fire drills with rest of school.

Sensory Training

1. Color discrimination. (f: 86; EI: 209)

   Teacher comments on the color of something.

   Teacher tells children what the colors are, explaining their names and how they are alike or different.

   Match two colors in a card game, a puzzle.

   Put a mark on pictures of objects that are the same color.

   Sort objects by color.

   Compare a color on a chart with something a child is wearing.

Pick out one color among several on a chart or among crayons.

Find an object of a specified color in the room; name familiar things that are all the same color.

Drill on stop and go colors.

Use color clues in numbers.

Find a certain number of a certain colored object; count the number of objects that are of the same color.

Point out a color in a picture.

Hold up a block of an asked-for color.

Tell the colors of objects on a flannel board.

Use drill cards of colors; if child knows that color he gets to hold the card, etc.

Tell all the colors on a color chart, what colors are in a picture, a book, on blocks, in the flag.

Teacher explains what colors belong to or fit certain things, such as fruit, etc.

Color a picture according to the color words written on each section.

2. Visual and auditory discrimination and memory. (f: 98; EI: 266)

Visual discrimination.

Copy words from a book.

Copy a pattern the teacher is building with blocks.

Imitate a leader in a game.

Imitate fast or slow movements of a leader during exercises.

Imitate movements in dancing.

Watch a demonstration and try to do it later.

Put a finger on something asked for in a picture; tell details in a picture.

Indicate likenesses and differences in shapes on the flannel board or seatwork.

Rearrange objects on a flannel board to make each line alike.

Compare two objects in shape or size.

Stack dishes of same shape together.

Sort play money in the cash register.

Sort word cards from number cards; sort anything by color, shape, size.

Pick out the toys that were the same in a row of objects.

Learning to stay inside the lines while coloring or on the lines while tracing.

Outline a picture heavily to help in coloring.

Match the correct number of counting blocks to dot cards.

Fit the correct shapes together in puzzles.

Build with blocks.

Match and sew buttons to dots on cards.

Match pictures, colors, numbers, name cards.

Find words in workbooks to match cards the teacher holds up.

Find a page number to match the one the teacher shows.

Find the matching picture for an object like a flower.

Compare work with a model to see it is done correctly.

Aim a gun.

Notice in crafts which side of the object should go up or down.

Auditory discrimination.

Listen to music to know when to begin the singing or actions.

Remember to use gestures instead of words at the right places in a song.

Listen for a change in the music so the dancing or rhythm can change.

Stop when the music stops, as in musical chairs.

Imitate a note played or sung by the teacher.

Go fast or slow, loud or soft, in imitation of teacher in a speech drill, singing, rhythm band, etc.

Hold or cut short a musical note as the music requires.

Play "song lotto": Listening to a record, mark the picture that goes with the song.

Compare sounds to see if they are alike or different, animal sounds, instruments, etc.

Decide what different instruments are playing on a record.

Listen for beginning sounds in words.

Relate actions to a sound; hold up a card at the right moment, make the right gesture, etc.

Follow printed words in a story as the teacher reads aloud.

3. Training other senses. (f: 49; EI: 107)

Spatial relations.

Learn concepts for over and under; use them in weaving.

Learn right and left hand and foot. (Practice the "looby-loo"game.)

Learn to place knives and forks in the right positions.

Learn "wide" and "narrow" in comparing objects.

Learn "largest," "smallest," in putting parts of a color cone together.

Learn directions "up" and "down" in drawing and writing.

Learn the concept of roundness in drawing apple or circle on floor for a game.

Learn to judge sizes and shapes on puzzle pieces.

Figure out relative positions when putting eyes, nose, mouth on Jack-O-Lantern or snowman, or in fitting a specified number of objects on a paper.

Note closeness to a target in throwing beanbag or ball, shooting a target gun, rolling a ball at a block.

Learn directions north and south.

Sense of touch.

Feel objects to help in judging size, weight. (In one class, a boy who was hard of hearing was asked to put his hand on the piano to follow the rhythm through the vibrations.)

Tell from the softness of clay when it is ready to work; have children feel leaves, comment on the feeling.

Play a game where they feel something through a bag and try to guess what it is.

Feel speech sounds in nose, throat, etc.

Mental Development

1. Creative (children do things their own way; activity not structured entirely by teacher). (f: 3; EI: 5)
   Paste figures and designs from wall paper books to make their own designs.
   Make own figures with building blocks.
   Make original shapes out of clay.
   Do easel painting, finger painting.
   Make original pictures with crayons.

2. Memory. (f: 45; EI: 129)
   Sing solo songs, solo echoes.
   Say from memory the words of a song, nursery rhyme, television jingle, Bible verse, or Psalm.
   One child says grace for the whole class.
   Say the names of all the children in the room, days of the week.
   Name all the vegetables they can think of.
   Name or point to everything on a chart the group has been talking about.
   Retell a story.
   List all they can remember seeing at an outside event the day before.

3. Imagination. (f: 2; EI: 4)
   Talk about what the block shapes might represent.
   Tell what might happen next in a picture.
   Play any type of make-believe.

4. Concept building (runs all through the day in any lesson). (f: 98; EI: 196)
   Teacher defines or explains a word.
   Teacher explains what certain objects are in pictures.
   Teacher demonstrates or shows what a word means.
   Teacher explains a situation, what it is, what in involves.
   Teacher explains a consequence of action.
   Teacher reads or tells a story to explain a more abstract concept like growth.
   Discuss an idea or meaning in a story, song, etc.
   Teacher explains what certain things are used for, their function.
   Teacher explains how something works, why it does or doesn't work.
   Teacher asks questions about what the children are drawing to give other ideas.
   Teacher explains what is involved in a job like policeman's.
   Teacher relates a color to something they know.
   Teacher explains what a number is, relates numbers to objects.
   Teacher helps develop a concept of time by talking about the time certain activities come or how long vacation is.
   Teacher explains a category, such as animal, bird, food, etc.; has children list things according to categories.

Teacher explains difference between boy and girl, drills children on whether they are boy or girl.

Teacher explains that "Sir," "Ma'am," "Mr.," "Mrs." refer to adult men or women.

Teacher explains difference between real and make-believe, using toys and real objects (telephones, etc.).

Learn to use the correct word in a sentence so the sentence says what the child thinks it does.

Teacher explains that some words show it is happening now, and some that it happened a while ago (tense of verbs).

5. Problem solving (making decisions, making judgments, evaluation, guessing, giving reasons for things, inference, solving manipulative problems). (f: 44; EI: 99)

   Teacher uses guiding or clue questions to help a child figure out an answer.

   Teacher asks a child to make his own decisions on where to begin, what to do, or how to do a thing.

   Teacher cautions other children not to help another, but to let him figure it out for himself.

   Teacher asks children to give reasons why something might be happening as it is in a picture.

   Teacher has children make decisions about what they want to do in free play period.

   Teacher has one child choose another to be "it," or do a certain job.

   Teacher has a child decide which three children he will name in his song.

   Teacher leaves it up to the children to decide when their work is finished.

   Teacher asks other children if one child has done something correctly.

   Teacher asks a child what is wrong with something, how it is supposed to be.

   Teacher asks a child what he is supposed to be doing or what there is left to do.

   Teacher has children check the room to see if anything is out of place.

   Children are asked to inspect the others to see if their work is done, if they are clean, if their desks are neat, etc.

   Teacher has child decide what belongs where in putting things away.

   Think, in a game, of something different to do from what is already done.

   Decide which box or paper, etc., belongs to which child.

   Try to put a wooden train together; put puzzles together.

   Figure out for themselves how to set up a cot or folding table.

   Work three or four puzzles at the same time with all the pieces spread out at once.

   Guess who did something, the answer to something, what a story would be about, what sound they are hearing, what instrument is on the record, etc.

6. Following directions. (f: 154; EI: 289)

   Teacher tells child to listen to directions before starting.

When assigning work, teacher tells children she is going to see how well they can follow directions, or makes a game of following directions.

Follow directions for passing papers, get materials ready, use workbooks, get in line, put things away, erase the board, put chairs into position, straighten the room, do seatwork papers, play a game, put objects on a flannel board, point out a picture.

Follow step-by-step directions for drawing a picture or pasting objects as teacher demonstrates.

Follow directions for getting a certain number and color object.

Teacher calls directions in a dance such as the "Virginia Reel."

Follow directions in practicing a show or entertainment.

Teacher gives rather difficult directions for finding something in the room as part of drill on following directions.

Follow directions on an errand.

Indications of Needed Research

The patterning of teaching techniques needs more study. Problem areas in teaching should be further clarified, including the applicability of the seven clusters (mentioned earlier) to other types of classes. Further investigation is needed to discover which teaching techniques would produce the best results in each of the problem areas.

The problem of consistency in use of teaching techniques needs exploring to determine advantages and disadvantages, and when or if changes might be needed. Also, investigation into the relationship between teachers' personality patterns and use of specific teaching techniques seems needed.

Since there do seem to be differences in use of specific teaching techniques when such variables as homogeneity of grouping, class size, teaching effectiveness, and perhaps age of the children are taken into account, controlled studies should be made to test for efficacy of various specific techniques under different classroom conditions and for different types of children. This would be one facet of teaching effectiveness.

If maximum learning is to be possible for trainable children, the problem of individual and group control should receive more study. Such study should include the effects of time and its possible related factors of attention span, overstimulation and fatigue, and the relationship of type and length of lesson, activity by the children, and teaching techniques to the area of individual and group control.

The check list of teaching competencies needs testing in applied situations with control groups set up according to external criteria. Items which do discriminate should eventually be expanded into some sort of practical rating scale. With such a rating scale, the possible influence of degree of professional training, age of teachers, type of child, etc., on teaching effectiveness could be measured.

Some measures are needed so that a trainable child's use or application of information, attitudes, and habits involved in the different lesson areas can be studied. More of this type of research, if carried over into both follow-up and longitudinal studies, would help provide answers to the questions of feasibility and usefulness of different lesson areas in these training programs and possible needed variations for different ages and types of children.

More information is needed on lesson emphasis in other states in order to see if the findings in this study are typical of other training programs.

The relationship of variables such as type of grouping, class size, and teaching skill to the use and emphasis of specific lesson areas needs clarifying. The qualitative aspects of lesson emphasis also should be investigated, including the relationship of amount of emphasis to degree of learning.

More study is needed on the best ways of presenting specific lesson material; studies using control groups could provide more definitive answers here.

More study is needed of the problem of individualization of instruction and the best methods of achieving it with different types of children and class situations without loss of possible values in group experiences.

It may be profitable to explore further the dynamics of lesson repetition that were suggested in this study, including the relationship of such factors as type of grouping, age of children, and methods of using repetition.

The possible contribution of repeated "casual mention" of a topic to a trainable child's perception and awareness of that topic seems to need study. More study is also needed of the *rate* of learning of trainable children, and the contributions to retention of various types of practice and experience with the learnings.

The impact of state-wide inservice training programs probably should be investigated further. By using comparative groups and by measuring differences in lesson emphasis before and after training, it would be possible to determine the value of this type of measure. Then the usefulness of different inservice training techniques could be evaluated.

The whole problem of the matron's role in these trainable classes needs study. Such study might be essential to understanding of teacher effectiveness in general in these trainable classes.

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